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February 2003  
Volume 74  
No. 2  
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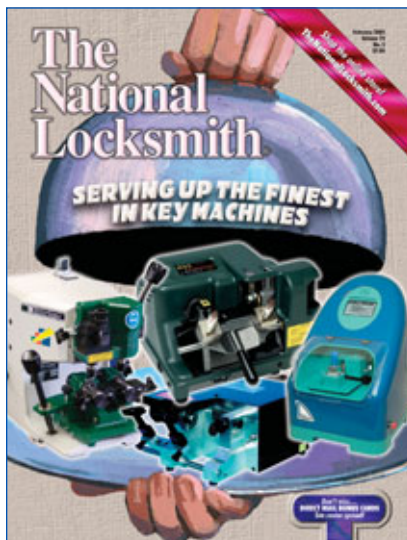
Pictured from left to right starting at the top:  
 747XU, 1200CMB, 123SHARK, 1200PCH, 9120RM,  
 KEKAB-DL65, KEP-15-301, KEKAB-T30, 511, KEKAB-30,  
 CO-18, AW-99, CO-61, AKK-99, CO-79,  
 LHR-100, CGIT-10, SUT-14, FAL-10 TRU-99,  
 USA-10, HPG-10, COLOR-35, TLP-CMOD-B, NDPK-100,  
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## On The Cover...



The key duplicating machine in the backbone of almost every locksmith business. They are served up in a variety of footprints and configurations to fit almost every palette.

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**Editor** ..... Greg Mango  
**Art Director** ..... Jim Darow  
**Technical Editor** ..... Jake Jakubowski  
**Senior Writers**  
 Sal Dulcamaro CML, Michael Hyde, Dale Libby  
 CMS, Dave McOmie, Sara Probasco,  
 Robert Sieveking  
**Contributing Writers**  
 John Blankenship, Tony Blass, Carl Cloud,  
 Ron & Chris Curry, Mark Daniel, Richard Allen  
 Dickey, William C. Deutsch, Giles Kalvelage,  
 Tom Lynch, Tom Mazzone, Randy Mize, Tom  
 Seroogy, Don Shiles, Jeffery M. Trepanier  
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**Production Assistants**  
 Dave Krolf, Joseph Bonus  
**Administrative Assistants** ..... LaVerne Schertzing, Chandra Smith  
**Shipping Manager** ..... Allan Galvez

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(630) 837-2044 • Fax: (630) 837-1210  
 E-Mail: natlock@aol.com  
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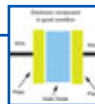
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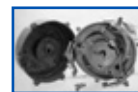
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# COMMENTARY



## Empty Those Maxwell House Cans!

**D**o you have old or weird inventory sitting around taking up space on shelves, under counters — or worse yet, jumbled together in coffee cans? (I do think the Locksmith Community owes a debt of gratitude to Maxwell House for inventing inventory control storage systems!)

Well you may be surprised to learn how much you can get for those battered old cylinders, antique keys, etc. Are you thinking Garage Sale? No way. Too much trouble making out all those little tags, and haggling with the neighbors over a quarter.

Think E Bay instead. A recent search of E Bay, using the keyword 'locksmith,' yielded a return of 618 items for auction. While E Bay theoretically bans the sale of picks and key machines, you can still sell off lots of good stuff for more money than you might think. Moreover, you might just find that impossible to locate pin kit you always wanted to own.

Recently for auction on E Bay were cam lock sets, pinning kits, tools, a Yale cylindrical lever set, and much more. I even found a bunch of Mas Hamilton safe locks up for sale.

I can almost predict the complaints I may receive from some of you about how locksmith items should not be for sale where the general public can get their hands on

them. And while I may agree with you in principle, I still say, join the real world.

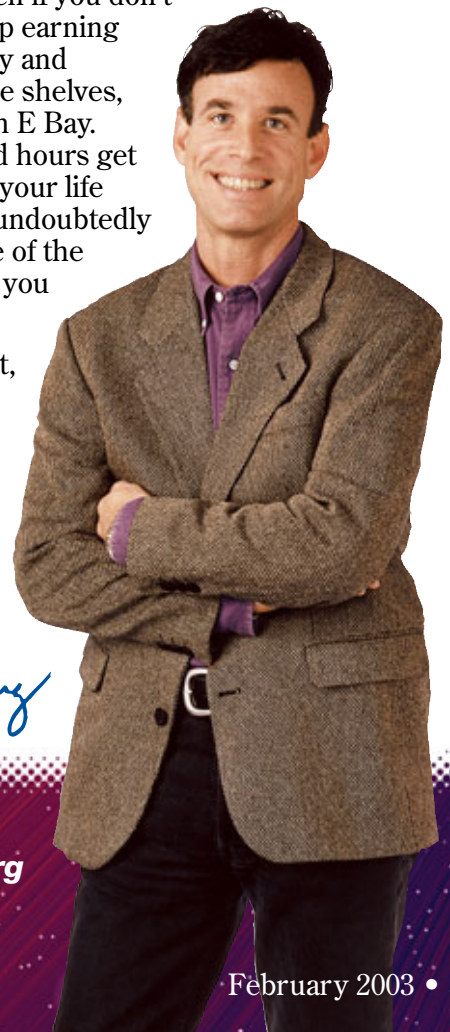
Locksmith stuff is available, like it or not. I'm not suggesting that you sell sensitive items to the public. But frankly, who cares who buys your old pin kit? In case you do care, however, you can state online that you restrict your sale to bona fide locksmiths, and request proof before delivery.



Even if you don't end up earning money and clearing off the shelves, be careful with E Bay. You might find hours get sucked out of your life viewing (and undoubtedly buying!) some of the weirdest stuff you can imagine.

Check it out, have fun, and remember to sleep at night once in a while!

*Marc Goldberg*



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**Marc Goldberg**  
Publisher



# Mango's Message

## Who's Next?

**W**ell, we are off and running into a new year. There is no doubt that the face of this industry has dramatically changed over the past few years, and the start of this year is no exception. Company acquisitions in recent years have been unprecedented. Nobody would have guessed that the ASSA ABLOY Group would have purchased Mul-T-Lock, Arrow, Yale, Sargent, Corbin, Russwin, Rixson, Norton Door Controls, effeff, ElSafe, Emtek, ESSEX, Fichet, Securitron, HES, and its arch enemy, Medeco, to name just a few. Or that the mighty Ilco Group would have been gobbled up by Kaba Holding AG, with the Ilco name phasing out.

The Ingersoll-Rand Group (IR Security & Safety) owns LCN, Dor-O-Matic, Monarch, Falcon, Glynn-Johnson, Ives, Recognition Systems, and recently purchased Locknetics and Kryptonite. That is just a hint of what has transpired in recent years, with many sub-groups in on the act as well, before a bigger fish consumed them.

Between just these three groups, more than 25 industry related companies that were once independent operators, have been consolidated, and there is more to come. As a group, each company benefits from greater buying power, and most companies are afforded the opportunity to operate as independent entities within their given group. I have heard of several instances where two companies within the same group fiercely competed against one another to win a given bid.

To kick this new year off, Lockmasters, Inc. of Nicholasville, Kentucky purchased Tech-Train Productions in Pensacola, Florida. Many of you are familiar with Steve Young, founder of Tech-Train, from the many automotive seminars he has given over the years, and his monthly Quick Entry car opening articles he has authored for *The National Locksmith*. Steve was by far one of the most active and influential individuals in the automotive arena. I know of no one who has done more automotive

training seminars than Steve. He was always there to help. So one must ask, what affect will the purchase of Tech-Train by Lockmasters have?

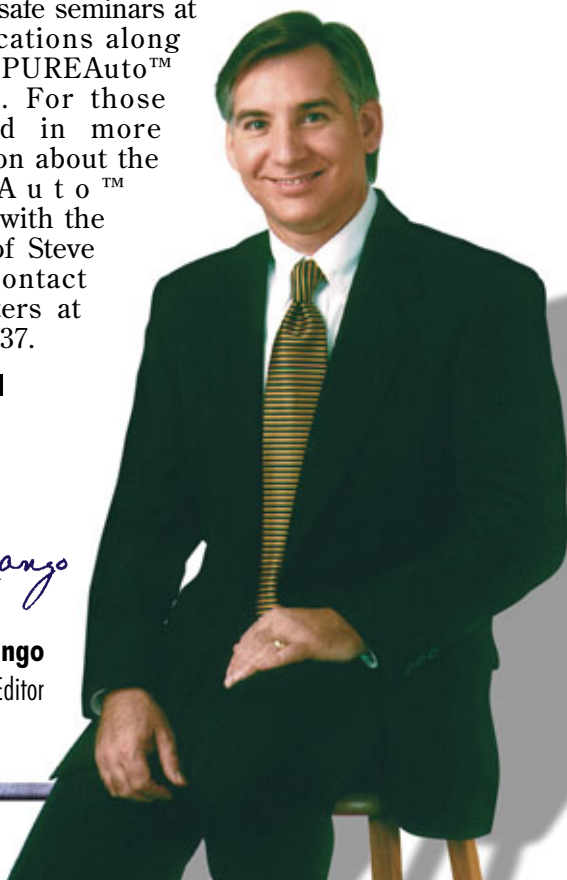
According to Lockmasters, the Tech-Train name will remain, however the Florida operation will move to Nicholasville, KY and all orders and fulfillment will be handled by Lockmasters in Kentucky. Steve is officially part of the Lockmasters organization, and for now will remain in Florida developing car opening tools, manuals, instruction videos, a new line of DVD products, and participate in Lockmasters PUREAuto™ seminars. Steve will also still be available for technical support on his hot line.

The introduction of last year's PUREAuto™ seminars was a huge success for Lockmasters, and this year they are also including safe seminars at select locations along with the PUREAuto™ seminars. For those interested in more information about the PUREAuto™ seminars with the addition of Steve Young, contact Lockmasters at 800-654-0637.

RL



**Greg Mango**  
Editor







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# Letters

*The National Locksmith* is interested in your view. We do reserve the right to edit for clarity and length.

## Thanks for the Recognition

I wanted to really thank you for the nice Mango's Message editorial you wrote in November on our dealer trade show. It is sure nice to get some recognition for our efforts.

As you can imagine, I am a strong supporter of regional distribution and the things that we do well. An example of which is providing information and training on a local level for the security professional to improve their knowledge.

Again thanks, and I hope you and Rachel can make it again next year!

*Paul Justen, President  
Doyle Security*

## Being on Guard

I just read of the death of Ed Walsh. This was a shock!

Some questions do come to mind. An employee of a large alarm company tells me cutting the phone line would automatically send a signal to their monitoring station (if it was a quality alarm). Also the bell

or siren should have warned Ed of the break-in.

I live in a rural area. It takes the police 40 minutes to one hour to get here if we call. The police and residents around here know we are on our own. Arizona is an open carry state. It's just a fact of life, we do have to take care of ourselves here. The point is you really have to be on guard. We do live in a nasty world. Also, how easy was it to force open a locksmith's front door?

*Richard A. Ingeman  
Arizona*

## An Overdue Thank-You

I'm overdue in thanking you for my two prizes won with two Tech Tips this year. I was just about ready to buy a Wedgeco key extractor kit, when I won it with a tip. Wow! Talk about great timing. The second tip earned a Master Z Tool lockout kit. My better half was resisting all of my efforts to become involved in locksmithing until the kit arrived. She opened it and read the manual from cover to cover. Then she said to me "I can do this"! I didn't want to burst her enthusiasm "bubble" by telling her there is a little more to car openings than reading about it, so I kept mum, but I'm very happy the manual made everything so simple for her.

To you, Jake and Marc, many thanks for providing this part of the magazine, where I can go to learn more about my trade. And to all of the manufacturers that donate these excellent locksmith tools and products, thank you all from the bottom of my heart for your generosity.

*Doug Olenick  
E-mail*



## Handle Replacement

Hi! I am looking for a company that made replacement door handle covers, made out of metal to replace the plastic OEM products. If someone could please provide the information for me; be it phone number, address or website, it would really help.

I can be reached by e-mail at: nvkeyman1@aol.com.

*Sal Cuccia  
E-mail*

## Padlock Collector

I am an avid collector of padlocks and I have two that are in need of keys. One is a Simmons six lever; the keyway requires a double wing double bit key. The other is an ICRR (Illinois Central Rail Road); it's a lever lock. If anyone out there could help me with information to fabricate keys for these padlocks I would appreciate it.

I can be reached at: 1676 Maple #8, Solvang, CA 93463. Phone: (805) 688-4170.

*Frank C. Ewing  
California*

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# SECURITY

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# Cafe

## Framon #6 Spacing Block

The #6 spacing block (Part number: F2MSSB6) is an optional accessory for the Framon #1, #2, and #2J Code Machines. Spacing on the new block includes the new Toyota 50001-69999 series as well as 11 others. Customers who do a large volume of automotive work will find the spacing block an important addition to the machine. Detention spacings are also on this block; previously all #2J owners had a separate block for these spacings.



Currently, the #1, #2 and #2J Code Machines are shipped with five spacing blocks. Beginning November 1, 2002, we will include the #6 block as well. Pricing of the machines will remain unchanged.

## Blue SHARK™

HPC's new Blue SHARK™ will revolutionize the way keys are cut today! The Blue SHARK™ cuts by code or decodes a cut key (in essence, duplicating it). This type of duplication is by far superior to a standard duplicator in that the Blue SHARK™ is able to intuitively discern if the key is worn and create a more accurately cut key than the original!

The true beauty of this machine is the simplicity of



its touch screen as it guides you through the key cutting process. Its ease-of-use is unparalleled. The screen navigation process is straightforward; without training, you can start cutting keys within minutes of taking the machine out of the box.

The Blue SHARK™ contains a full code database that can be accessed with the touch of the screen. The best way to demonstrate its simplicity and intuitive nature is to experience it for yourself. To try out an interactive demo of the on-screen display identical to that of the Blue SHARK™ go to: [www.hpcworld.com/123shark](http://www.hpcworld.com/123shark).

## Securiton's DK-26 digital Keypad System

Securiton Magnalock Corporation is offering the DK-26 series keypad system for medium to high security locations. Using the extremely durable water proof, narrow stile doorframe size, cast stainless steel keypad technology from its previous version, the DK-26 incorporates a significantly upgraded central processor unit with features such as:

True 10-digit keypad operation, non-volatile

EEPROM memory, sixty codes programmable from keypad, programmable LED's and beeper, exit request input (REX) and more.



The DK-26 is available as a complete system with separate CPU controller housed in an easy to service metal cabinet placed inside the protected area. The keypad is available in brushed stainless steel or black power coated finishes. An optional spy shield is available to prevent unauthorized viewing. For indoor use, the DK-16 is available which fits comfortably into a wall switch size box.

Both the DK-26 and the DK-16 are backed by MagnaCare- Securiton's no questions asked lifetime replacement warranty, as well as toll free technical support from the USA and CANADA.

## Videx Adds New Cylinders to the CyberLock® Family

Videx announces six new CyberLock® electronic cylinders. For doorway applications, CyberLock cylinders are now available for 6- and 7-pin Yale knob sets and the large format Schlage IC. For the European



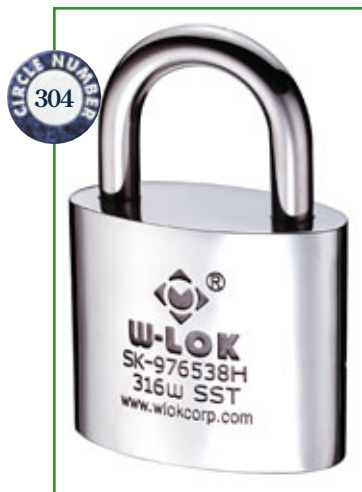
market, a new Profile cylinder with a single-keyway and knob, and a Scandinavian Oval cylinder have been added to the line. A Removable Plug cylinder for transit fare boxes and ticket dispensers also joins the fast-growing CyberLock family.

These smart cylinders are designed to quickly convert existing mechanical locks into a full-functioning access control system, all without hardwiring. CyberLocks can be installed wherever controlled access and an audit trail is needed. CyberLocks can go anywhere—from safes and vaults to vending machines and server cabinets, to doorways and padlocks. The applications are endless!

## W-LOK 9700 Series OvalLocks

W-LOK Corporation has introduced the 9700 Series OvalLock consisting of large and extra large bodies, guarded and unguarded with 3/8" and 1/2" shackle options. The 9700 Series is one of the most recent groups of padlocks to be introduced by W-LOK, a manufacturer of 100% stainless steel padlocks. The Series now extends to the MegaLock, ShackleLock, the new MaxiLock with removable shackle, and the new DiscLock for motorcycles. The 9700's maintain the worldwide-patented key and cylinders





offering keyed different, alike or master keyed across all lock series.

The 9700 Series OvalLoks have bodies' cast of 316 stainless steel. OvalLoks have totally stainless steel cylinders and components. They utilize W-LOK Corporation's latest design in twin slide block and L stop pin technology. This new line-up boasts secure weights from almost 2 lbs. to over 7 lbs.

The new 9700 Series OvalLoks are great for securing motorcycles, hasps, and traditional lock-up applications. This versatile series is great indoors, outdoors and in caustic environments where stamina and high security are a must.

### **Knob Option for Kaba Ilco's Solitaire 710-II and SolitaireSMART Locks**

Kaba Ilco Inc., formerly Ilco Unican, announced a new knob option for its popular Solitaire line of stand-alone electronic locks. Both the Solitaire 710-II magnetic stripe/keycard lock and the SolitaireSMART smart technology/magnetic stripe "dual technology" keycard lock can now be ordered with a knob (rather than a lever) on the inside and/or the outside housing.

The knob, originally developed for military applications, features a solid steel shaft for connection to the lock. The knobs are not

## **SECURITY** *Cafe*



ADA (Americans with Disabilities Act) compliant, but they are suitable for rooms that don't need to meet ADA requirements, particularly on special configuration doors. The new

knob option increases the ability of the Solitaire 710-II and SolitaireSMART to harmonize with any decor. The knob is available in satin brass or chrome, or bright brass, to match any of the available lock finishes.

Solitaire locks are a part of the Kaba Ilco Lodging Access Control System, an easy-to-use, keycard-based access control system for hotels, resorts, dormitories and other recreational and institutional lodging applications. All keycards needed to run the system are prepared on dedicated portable consoles called Front Desk Units. The system combines the convenience of stand-alone, battery-powered locks that require no wiring, with advanced electronic security features such as the ability to audit



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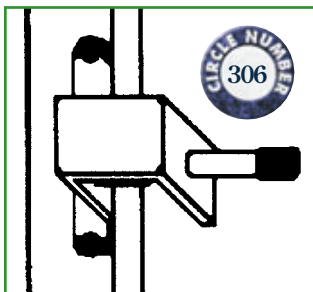


## SECURITY *Cafe*

any lock or Front Desk Unit. Since each new guest's keycard automatically cancels the previous guest's access, there is no need to service the locks themselves, except for routine maintenance or to download a lock audit. Locks are automatically re-keyed for each new occupant of the room, answering legal requirements for guest security, and protecting both guests and end-users.

### Billy Button

The Billy Button from



Suncoast Security is a lock for sliding glass doors. The lock takes about one minute to install and is available in boxes of 12 or 25.



### Andrew's Groovy Keys

Andrew's Wholesale Lock Supply has four exclusive Groovy Keys patterns from Jet, including Shamrock, Cards, Race Flag and Dice. Keys are available in KW1, SC1, M1 and WR5 and are priced with attractive margins to help boost impulse sales.



### In-Wall Rifle Safe

Perma-Vault Safe Company's Model RS-5600-4-M In-Wall Rifle Safe provides economical and secure protection in residential or institutional settings for rifles. Safes come standard with Medeco high security keyways, which can be masterkeyed, keyed alike, or keyed different with removable core locks. Optional LaGard eCAM digital electronic locks are also available.

Constructed of heavy gauge steel, the safe's interior dimensions of 56 inches high x 14-3/8 inches wide x 4 inches deep provides ample storage space for three or four rifles. Safes come with a vinyl lining and padded floor as well as an elastic band, which holds the barrel in place. The unit also has a self-installed shelf, which can be placed above the rifles for further storage.

## LCN Door Control Solutions and





The safe, which has a recessed door with 3-point locking and hidden hinges for increased security, is designed to fit between standard wall studs in the home, a guardhouse, or other location.

### Kwikset Ultramax Security™

Kwikset offers Grade 1 deadbolt security in the new Kwikset Ultramax Security™ line of door hardware designed, produced, and distributed for the residential construction and residential home markets.

Highly resistant to violation, Grade 1 deadbolts provide superior resistance against forcible entry. Extensive



testing for strength and durability of Grade 1 deadbolts include kicking, lock picking, and attacks with sledgehammers and wrenches. Kwikset offers UltraMax Security line deadbolts in single and double cylinders. The deadbolts are also featured on the Arlington, Chelsea, and Sheridan handle sets, which feature a titanium-alloy throw bolt core, a 6-pin cylinder with anti-pick pins, and an Ultra-Strike Door Jamb Brace™ designed to prevent forcible entry.

Kwikset UltraMax Security products including the new Grade 1 deadbolt are being introduced as part of the Kwikset initiative, which features three new Kwikset brands, core product introductions, innovative features, and clear concise communication. The new products will be available at wholesalers and distributors nationwide late in 2002.

## SECURITY Case

### Lockmasters LKM7000 Life Safety Exit Device GSA Approved

The LKM7000, Lockmasters new life safety exit device has been approved by the GSA and was found to comply with the requirements for qualification under Federal Specification FF-L-2890 and Interim Amendment-2 for the Type III/IV Pedestrian Deadbolt Lock.

The LKM7000 features single motion egress and deadbolt security. The device is non-handed and can be matched with a number of high-security locking devices including the Kaba Mas X-09, X-08 and X-07. Additionally the device can be used with an access control device and monitoring system in addition to a locking device.



### IR Offers Multiple ADA Solutions

IR Security and Safety is showcasing its Total Solutions approach to ADA door accessibility with a program featuring a selection of four

#### LCN

4600 Electric AutoEqualizer™



4600 Pneumatic AutoEqualizer™



#### DOR-O-MATIC

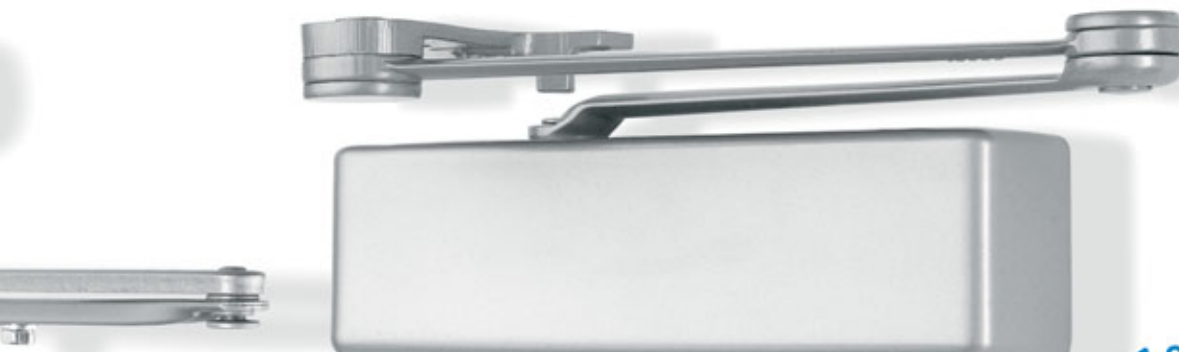
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## SECURITY Case

distinct low-energy door operators that are designed to provide fully integrated door control and accessibility.

Featured products include LCN® power operators, used primarily for manual openings with available push button assist, and Dor-O-Matic® power operators, for primarily automatic openings. Each of these products can be easily integrated with other IR products, including electric strikes, card readers and actuators to provide total opening control and accessibility.

The LCN 4600 Electric AutoEqualizer® includes a new digital control suite for easy installation and setup, as well as complete on-board diagnostics and quick plug-and-play connections. The LCN 4800 Pneumatic AutoEqualizer is ideal for

multiple door applications and is available with many features, including a "Blow Open" control box that is controlled by a building's smoke evacuation system. Both have been tested to over three million cycles or 10 times the industry standard. Both also integrate LCN's 10 million cycles Heavy Duty 4040 door closer.

The Dor-O-Matic Senior Swing™ power operator features Power Boost Assisted closing to ensure secure latching regardless of winds, drafts or pressure differentials. The complete unit has been tested to more than 10 million cycles. The Dor-O-Matic Benchmark power operator is value engineered to provide a durable product that combines state-of-the-art

technology with affordability. It has been tested to more than three million cycles. Both products incorporate a microprocessor control box for reliability and a Push'N'Go feature for automatic requirements without the added expense of optional activation accessories.

### Intruder Classroom Cylindrical Leverset

Introducing the MARKS USA "Survivor Series" Life Safety Classroom Intruder ANSI/BHMA F110 Function Leverset. To answer the challenge of security and life safety in today's classroom environment, MARKS USA Custom Lockset Division has developed the "Survivor Series" Classroom Intruder ANSI/BHMA F110 Function Leverset with the Clutch Design.

MARKS USA has incorporated all of the standard features of the



"Survivor Series" (Clutch System, Super Strength Retractor, Long Life Lever Support Spring and a Life Test of over 1 Million Cycles) with their new Life Safety Classroom Intruder Function. Typical Classroom function cylindrical locksets are designed to be locked or unlocked from the exterior, with the interior always in an open position. The new Life Safety Classroom Intruder Lockset by MARKS USA, is designed to be locked or unlocked from the exterior, always open on the interior, but allows in emergency life situations, the teacher to secure the classroom without stepping into the hallway to lock the outside handle.



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# KEY MACHINES

*Here we show an array of the various types of key machines available to the locksmith community to cover a wide variety of key cutting needs. Bear in mind that each company shown here offers other machines to fulfill different functions. In this article, however, you'll get a good overview on some of the different kinds of machines made as solutions for your differing needs.*

## **DIMARK BORKEY HIGH-SECURITY KEY MACHINE**

The Borkey model 989 Top-Cut machines are available through DiMark International. It is designed for cutting high-security keys, which are referred to by some as 'laser' keys, and for cutting drilled keys. It is a direct duplicator or can be used with guide keys for the purpose of coding keys. The machine cuts Keso, Kaba, Dom ix and other special keying systems, but most of the time, in the retail environment, it is used for the high security car keys.

The jaws are synchronized to rotate up to 45 degrees when cutting drilled keys that require the cuts to be on an angle. The jaws firmly hold keys and are designed with replaceable faceplates and tip stops should they become damaged or worn. Keys are quickly mounted in the standard jaws whether tip-stopped or gauged at the shoulder.

Each jaw has a disc attached on top, which can be rotated over keys like the 2-track Mercedes key, which requires extra stability. When not in use, the disc is not in the way. If the sample key is so badly worn that it can't be held in the jaw, there are adapters available that cradle the key in the jaw.

The carriage of the 989 Top-Cut moves freely in all horizontal directions. Spring tension can be adjusted so that the machine has a 'semi-automatic' feel both to the right and to the left, which assures more accurate duplicate keys. The path of the spring-loaded carriage is adjusted by the knurled knob, which is conveniently located at the right front of the machine. The machine comes with a 3mm cutter, which is used for most of the high-security keys. Also included is a 2.5mm cutter and guide for doing the Lexus key, which is cut up the center and a cutter, and guide for drilled keys. There is also a 1.5mm cutter and guide that is used for SEA or Bell-type keys.

The guides are simple to change and readjust, being capable of very fine adjustment. The guide can be operated in the spring-loaded mode as with drilled keys or it can be operated in a fixed plane as for the 2- and 4-track car keys. The spring-loaded mode allows the guide to index the sample key before the cutter contacts the key blank.

The lever handle on the right side of the machine lowers and raises the cutter/guide assembly. However, when cutting the high-security car keys, the cutter/guide assembly can be locked down in position so the guide just floats above the cuts on the sample key during the cutting process.

A tool holder is attached to the left side of the machine for convenient storage of cutters and guides. Spare cutters and guides are in stock at DiMark International. Push-type 'on' and 'off' switches on top of the machine control power to the machine and for the light. The construction of the Borkey 989 Top-Cut is all steel, weighing forty-four pounds.

## **FRAMON DBM-1 FLAT STEEL KEY DUPLICATOR**

Framon's DBM-1 Flat Steel Key Duplicator has been a staple in locksmith shops since its introduction in 1986. The DBM-1 makes quick work out of flat steel, safe deposit box, and corrugated key duplication by way of a solid carbide slotter.

### **Construction**

The DBM-1 features a carbide .045" slotter standard on the machine. Carbide allows the user to either cut brass or steel keys easily. The frame of the machine is all aluminum, and sealed ball bearings are used in the



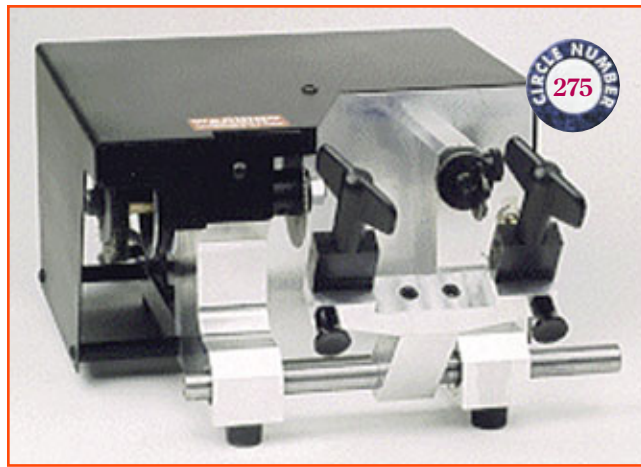
## HPC BLITZ™/1200CM™ TUBULAR KEY ADAPTER KIT

One of the primary aspects of locksmithing is cutting keys. You have invested a lot of money in your key cutting machines and you keep a wide range of key blanks in stock, with the sole intent to be able to cut the keys your customers need. When a customer presents you with a key that you cannot cut, it is lost revenue, business that will be going to your competition.

With that said, it is sometimes difficult to justify investing many hundreds of dollars on a new key machine to cut a specialty key that you do not see very often. This is often the case with tubular keys; many locksmiths do not get much call to cut them.

HPC has developed a new way to cut tubular keys, utilizing the most popular key machine, a machine that you probably have in your shop or in your van. The new Blitz™/1200CM™ Tubular Key Adapter Kit cuts standard 7-pin tubular keys by code quickly, accurately, and consistently.

The adapter is precision-machined in hardened steel. It is designed and built to be as durable as the machines on which it is used.



spindle. The DBM-1 features a one-year, parts, labor and freight warranty.

### Operation

The DBM-1 is a manual duplicator, meaning all movement is control directly by the user. Keys are inserted into the vises and alignment is done via the edge of the cutter and side of the guide. To make key loading easier, the spring-loaded guide can be locked into the key loading position with a lock knob. Once the keys are aligned, the lock knob is released.

To begin cutting the key, simply line up the cut part of the key with the guide and push straight in. Unlike cylinder key cutters, Framon slotters do not have side-milling capability; therefore all cuts are made as a straight-in plunge cut. Once the cut is made, move the carriage over and make the next cut. Some cuts are wider than the standard .045" slotter provided, so each cut will require two plunge cuts before it is complete.

Once all of the cuts are made on the key, remove burrs with either a file or the steel deburring brush on the machine.

### Other Features

The DBM-1 features a rotating guide for different width slotters. Carbide slotters are available in widths of .035", .045" (standard), .055", .066", and .088". If a locksmith is cutting a high quantity of keys that require widening of the cuts (such as a large safe deposit box job with all the same manufacturer), it may be more convenient to install a wider slotter and rotate the guide to the appropriate width.

Cutting two flat steel keys at a time is also possible on the DBM-1. Simply stack the two keys on top of each other and cut as you normally would.

### Final Thoughts

Many locksmiths turn down flat steel, corrugated padlock and safe deposit box work due to lack of a machine. With the DBM-1, these profitable keys can be cut quickly and easily, as well as bring in extra work along with them (such as changing safe deposit box locks).

At Framon, the same people who bring you some of the most accurate key machines in the locksmith industry, also run a full-time locksmith shop. Knowing the needs of the customer first hand keeps us ahead of the competition. Over 60 years of locksmith experience assures you, the customer, that when you call we'll understand your questions and be able to provide quick assistance.



The Tubular Adapter kit includes the following components:

- An adapter to hold the key blank
- A code card
- A carbide slotter cutter
- A positioning sleeve
- A tubular key decoder
- A 5/64" Allen wrench

Using the adapter is very simple. There is no need to adjust your machine to use the adapter, although, it is essential that your machine be accurately calibrated.

First, insert the code card and install the slotter cutter on your machine. Then install the positioning sleeve on the eccentric shaft. This sleeve holds the carriage in the proper position for using the tubular adapter. Remember to remove it before cutting standard keys.

Set the adapter to the first cut position (space) by aligning the "first space" mark on the cut positioning knob to the mark on the body of the adapter. Using the Allen wrench included with the kit, loosen the setscrew on the



adapter and insert a tubular key blank. Push the blank until it stops, and then tighten the setscrew.

Prior to installing the adapter on the machine, set the depth and space needles to the "gauge point" indicated on the code card. It is imperative to use these gauge points to insure the key is cut accurately. There is a clamping ridge on the bottom of the adapter. Place this ridge in the jaw on your Blitz™/1200CM™ machine. Slide the adapter until the tip of the blank touches the slotter cutter. Now, tighten the wing nut on the machine to secure the adapter in the jaw.

Due to the nature of cutting tubular keys (the depths are increased by cutting further down the barrel of the key blank), the lateral crank on the Blitz™/1200CM™ machine (that is used for setting the spaces on a standard key) is used to set the depths on a tubular key. Turn the lateral crank to position the needle to the desired depth.

Switch the machine on, and turn the front crank until the needle is at the "CUT" position, engaging the cutter and the key blank. Move the carriage back out.

Now turn the positioning knob on the adapter counter-clockwise to the second cut position. Turn the lateral crank to the appropriate depth, and turn the front crank to the "CUT" position. Continue with this process for the remaining 5 cuts.

With the decoder included with this kit, you can decode your customer's key, and create a new key to factory measurements. This will eliminate any inaccuracies that occur when duplicating a worn or second-generation key. Another important application is when you are called to service a lock where the keys are lost. With an HPC tubular lock pick, you can quickly pick the lock, decode the pick, and create a new key.

While it takes a lot of words to describe this procedure, the actual use of this adapter is quite simple and fast. Due to this unique method of cutting tubular keys on a Blitz™/1200CM™ machine, the keys cut with this adapter look different than traditionally cut tubular keys. Instead of the rounded cuts, separated by uncut material that you may be accustomed to seeing, the circular cutter produces wider, flatter cuts, with each cut adjacent to the next. While these keys look different, they function perfectly. There is also an adapter kit (No. TKA-SHARK) available for use on the new HPC Blue SHARK™ code machine.

### **ITL 950C CODE MACHINE**

INTRALOCK TOOLS has introduced a revolutionary new key/code machine for mobile or shop use. No longer do you have to look up and manually enter your car codes, nor do you need to carry a laptop computer with you. Using the latest technology developed for digital cameras, a compact flash memory card can hold all the codes available for automotive, filing cabinet, desk locks or padlocks in one secure replaceable card. ITL presently has all domestic, Japanese and Korean car codes installed, plus many file cabinet and desk lock series. ITL is working on European car codes and will soon have an update card available.

Using a proprietary search algorithm you can find any code in 3 seconds or less. If two or more cars are using the same code sequence, a scrolling list is presented for your choice. As soon as you select the desired code the display will show the bitting and what key blank to use. The newly included specialty inserts hold the key blank for easy cutting of double-sided keys. The ITL950C comes with an



offset cutter for most automotive and commercial key work, and like all ITL machines, the different suggested manufacturer flats are widened automatically without having to change cutters.

The code machine has over 500 different sets of depths and spacing built in for all popular locks, and as an added feature up to 200 new sets can be quickly added by the user. The new keypad has been designed to be an easy transition for those used to the ITL950 with the numeric keys and function keys in their traditional places.

The ITL950C has many built in features such as the ability to enter a temporary depth adjustment of up to + or - 9 thousandths of an inch. This is handy to generate a key for lock cylinders that are worn. Because of our ability to cut any one cut at a time progression charts or key impressing are possible.

Unlike most code machines, the ITL950C was designed with the mobile locksmith in mind. It has the smallest footprint and of any computerized code machine available to preserve precious bench space and was built to withstand the rigors of truck life. As a standard feature it will operate equally well on 12 Volts DC or 110 Volts AC. It comes with mounting holes and an installation template. The ITL950C weighs in at a light 38 lbs.

All key machines should be adjusted occasionally and ITL has made adjusting the ITL950C a breeze. There are no nuts, bolts or screws to move, as the adjustments of both spacing and depths are done with software. With the simple measurement of a cut key changing a depth or space reference number can make a space or depth adjustment.

A three level industry standard grand master key system is built in to the ITL950C computer. The machine will quickly generate a master or grandmaster key system with sub-masters and the desired number of change keys. Master key variables such as MACS limits, Maximum duplicate cuts or rotational generation sequences can be chosen. The system can be down loaded into a Windows based computer for printing of keying charts, hardware

**Continued on page 22**

# Promaster 4

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reports or just to save the system for later use. Any number of any generated code keys can be cut at any time.

Intralock Tools has been continually manufacturing computerized key machines for the locksmith since 1984, longer than anyone else in the industry. We have 10 different computerized models ranging from small mobile use to heavy duty self feeding industrial use. ITL also manufactures the ITL2000 safe dialer. It was the first commercial unit on the market and still is the most popular unit available. It's this background along with the desire to create the finest machines on the market using the latest technologies that has kept ITL in the forefront of key machine development.

### ILCO'S 045 SEMI-AUTOMATIC KEY DUPLICATOR

Borrowing from Ilco's top-of-line Bravo II and KD50C semi-automatic models, the company's designers were able to incorporate several of the popular "performance features" into the design of the 045, and in the process create a totally new level of performance for a product of its type and price point. From the moment it was introduced, the 045 began to earn the reputation of being a "workhorse" machine, and unique in the mid-priced key machine market.

A dial-type depth adjustment system, circuit breaker protection, sealed switches, and an efficient 1/4 hp "inverter friendly" motor are just a few of the design innovations that were applied to the 045. The 045 became the flagship model of Ilco's new Performance Series line of key duplicating equipment. In addition to the 045, this lineup presently includes a semi-automatic version (044), an automatic model (040), and a special version designed for duplicating safe deposit and other flat keys (046).



Along with its attractive hammer-tone painted finish, one of the first things one notices about the 045 is the relatively wide spacing between the machine's 4-way vise jaws. Both the machine's carriage and key gauge were developed to accommodate the increasingly longer keys that automotive manufacturers and others have chosen to use in recent years. The 045 will accept tip-gauged keys up to 4-1/2" in length, and even longer shoulder-gauged keys. The 4-way vise jaws are designed to securely grip virtually all common cylinder keys without the need for adapters or shims.

One of the four vise jaw positions provided is specifically designed for clamping double-sided

automotive keys using a key's "center groove". This jaw position is especially useful in instances where a customer's key has deep cuts along each side, or exhibits signs of excessive wear, which make clamping a key using traditional techniques problematic. Other jaw positions provided are intended for narrow (example: M2 padlock key), wide, and "normal size" keys.

The machine is equipped with a titanium nitride coated M2 tool steel cutter for increased service life and requires minimal maintenance. Most parts can be easily replaced by the owner should the need arise.

One feature of the 045 that owners especially like is its "dial type" depth adjustment system. While usually seen only on high-end duplicators, every Ilco Performance Series duplicator model incorporates this type system. Essentially, a dial type depth adjustment system allows a machine to be accurately calibrated with far less guesswork and effort. After loosening a binding plate, the machine's cutter guide (stylus) is adjusted to increase or decrease cut depth by simply rotating a dial. The dial has a series of markings around its circumference. Each mark is equivalent to .0015" (1-1/2 thousandths of an inch) of depth adjustment.

Whether you adjust your key machines using the "two key blank method", or the more accurate method of measuring a duplicate key (using calipers or a key micrometer) and comparing the reading obtained against that of the pattern key, dial type depth adjustment systems greatly simplify the process and help you achieve maximum accuracy.

For long-term reliability, the 045 utilizes a sealed power switch for enhanced protection against the build up of the metal particles generated while duplicating keys. It is further protected against electrical hazard by a built-in circuit breaker. The machine (110 volt version) has CSA/NRTL (U.L. equivalent) certification and is thus "legal" to operate in jurisdictions requiring such.

The 110-volt version of the 045 utilizes an electrically efficient 1/4 hp capacitor start drive motor. This motor requires less "start up current" than that required by similar competitive key machine products, and is suitable for use with a majority of inverter/ generator products of 500 watt and higher output (continuous rating).

In summary, while many shops may use faster, full featured semi-automatic key duplicating machines as their primary machine, manual key machines today still enjoy broad acceptance. And... with the 045, you don't have to accept "bare bones" performance when a manual style model is your machine of choice.

### BIANCHI USA

Semiautomatic key machines were introduced to make key duplication quicker and easier by loading and positioning keys, releasing the carriage mechanism, and proceeding with key duplication. There are numerous advantages over manual duplicators. With a semiautomatic machine, the carriage handle and lateral carriage lever guide the operator through the key cutting process resulting in a more controlled and precise cut. Consistency of the cut is improved since the carriage is spring loaded. Unlike automatic duplicators, the key machine operator controls and feels the entire cutting process.

An example of a semiautomatic duplicator is the Bianchi 104. The machine is manufactured by Bianchi



1770, and is available through the company's North American division, Bianchi USA. The Bianchi family has produced quality security products in northern Italy since 1770 and has been a leader in key machine design, innovation and quality for decades.

The Bianchi 104 anchors the line of three machines that are currently available in North America. The company markets a broader line of key machines worldwide. The 104 is designed with heavy use in mind and is packed with features, giving new meaning to the word "durable." The 104 will last for many years and the cast iron body makes this 57-pound machine the tank of its class. The machine design and weight dramatically reduce

vibration and noise and extend the cutter life of this workhorse. The smooth cast iron body coating is oil based resulting in easy machine cleaning.

The micro-switch activated cutter motor starts as the spring-loaded carriage is moved forward. The carriage rides on roller bearings resulting a smooth precise cut and addresses the cutter and tracer only when the key gauges are down. Machine calibration is simple and accurate due to micrometric tracer adjustment for both spacing and depth.

Four way reversible jaws are spaced wide to accommodate the new longer and larger headed keys, and securely clamp keys without the need for adaptors. The unique one-piece jaw alignment system ensures a consistently parallel relationship between the hardened steel jaws, tracer and high speed steel cutter and eliminates rocking, the phenomenon in which the cut depth varies from left to right. The jaws also rest directly on the jaw pin, which improves tolerance. The ergonomically designed "L" style jaw handles make key gripping easy and hard alloy handles reduce both inner and outer part wear and overall replacement frequency.

The relatively small 13" wide x 13" deep machine size and 1/4-horsepower motor make the machine ideal for mobile use. The Bianchi 104 includes a dual belt pulley system, an independent large red momentary brush button and nylon deburring brush. A transparent cutter shield spans the entire cutting area, which minimizes key shaving dispersal. This is important for safety purposes and eases the cleaning process. A lamp with a flexible and durable stem and universal easy to replace bulb is also included. In addition, there is a compartment specially designed to hold tools, keys and/or locks. **TL**

**New Product**



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## Odyssey 01

**YEAR:** 1995 - 1998  
**LINKAGE:** HORIZONTAL  
**PICK:** CCW  
**TOOL:** AO-38  
 "Honda Tool"

HONDA



### PREFERRED OPENING METHOD

This is a new model for 1995. This model opens the same as the Isuzu Oasis.

1. Insert a wedge at 11" from the rear edge of the door frame of the front passenger door.
2. Insert an inspection light into the door cavity at 10" from the rear edge of the door frame and identify the cloth covered vertical rod located below the interior lock-unlock button head.
3. Insert the small hook end of an AO38 "Honda Tool" at 9" from the rear edge of the door frame, tip facing rearward. (Photo 2)
4. Lower the AO38 12" into the door cavity. Rotate tool 90° clockwise and lift the tip of the tool until the tip of the tool makes contact with the vertical rod. Seat the tip of the tool under the vertical rod. Twist the tool to bind the rod. (Photo 3)
5. Lift the vertical rod gently to unlock the door.



### ALTERNATE OPENING METHOD

1. Insert a wedge at 11" from the rear edge of the window glass of the rear passenger door.
2. Insert an inspection light into the door cavity at 13" from the rear edge of the window glass and identify the white plastic guard plate. There are 2 horizontal rods located behind the guard plate. The upper rod is the lock rod.
3. Insert the large "U" end of an AO43 "Back Flip Tool" at 8" from the rear edge of the window glass, tip facing rearward.
4. Lower the AO43 15" into the door cavity. Rotate the tool 45° clockwise. Lift the tip of the tool 2 1/2" and rotate it counter-clockwise to contact the linkage rod. Lower the tool to seat the tip of the tool on the upper horizontal rod. Twist the tool to bind the rod. (Photo 4)
5. Slide the horizontal rod forward to unlock the door.

## Odyssey 02

**YEAR:** 1999 -  
**LINKAGE:** HORIZONTAL  
**PICK:** CCW  
**TOOL:** AO-01  
 "Slide Lock Tool"

HONDA



### PREFERRED OPENING METHOD

This model was redesigned in 1999.

1. Insert a wedge at 8" from the rear edge of the window glass of the front passenger door.
2. Insert an inspection light and identify the white plastic guard plate surrounding the vertical rod. Observe the upper and lower gap, in relation to the guard plate mounting screw. The tool may be inserted in either gap.
3. Flex the "U" end of an AO01 "Slide Lock Tool" out 15". Insert the AO01 at 6" from the rear edge of the window glass, tip facing rearward. (Photo 2)
4. Lower the AO01 11" into the door cavity. Rotate the tool 30° clockwise (upper gap) and 45° (lower gap). Lift the tip of the tool and manipulate through either gap. Rotate the tool 20° counter-clockwise and position the tip of the tool under the button head. (Photo 3)
5. Lift the button head gently to unlock the door.



### ALTERNATE OPENING METHOD

1. Insert a Pump Wedge at 13" from the rear edge of the window glass of the front passenger door. Inflate wedge.
2. Insert an AO34 "MCOT-Narrow Tool" at 6 1/2" from the rear edge of the window glass, tip facing rearward.
3. Lower the AO34 12" into the door cavity and rotate it beneath the bottom edge of the window glass. Deflate wedge.
4. Lift the tool, gradually working the tip of the tool into the vehicle interior. Rotate the tool 45° clockwise and position the tip of the tool under the lock-unlock button. (Photo 4)
5. Lift the lock-unlock button to unlock the door.



## • Easy to Find Manufacturer

Each manufacturer is a different color tab. For example, the Honda section is green, Isuzu is blue...

## • Easy Page Numbering Format

Each model is together, consecutively. This set up is so easy a table of contents is not necessary. (for example) Mustang page 01 covers 1965 - 93 Mustang page 02 covers 1994 - 97 Mustang page 03 covers 1998 - to current if changed, page 04 will show the new opening method.

## • Alternate Methods

You don't have the right tool? Are you having trouble opening the car? At the bottom of each page, we provide you with an alternate opening method/tool if we have one.

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# KARA®



## 045 VERSUS 025



by  
**Ken Holmlund**

The Ilco 025 key machine has long been the standard for locksmith use. It had all the features needed by the locksmith: quality, accuracy, speed and adaptability. With the introduction of new keys with larger heads, changes were needed. With the introduction of the 045 machine, Ilco has done just that. Some of the changes are cosmetic, but most have a practical purpose.

The first change you see when you look at the 045 is the color of the machine. (See *photograph 1.*) Instead of the familiar cream color (see *photograph 2*), the 045 is green. It is one of the cosmetic changes I mentioned, but it makes the machine stand out from all others.

**1. The 045 key machine with cover.**



**2. The 025 key machine with cover.**

**3. The 025 vises and carriage.**



**4. The 045 vises, carriage and handle.**

The change that will affect us most in the field is the widening of the vises. The 025 machine had a space of 2 inches between the vises (see *photograph 3*), while the 045 has 3.25 inches (see *photograph 4*). If you have ever barked your hands on the vises when cutting keys, you will really appreciate the wider spacing. I have never found I needed the extra space for the head of a key blank, but I sure have wished I had more room to place and remove them so I will be happy for the change.

Along with the wider spacing comes a need for a different key gauge. (See *photograph 5.*) The 045 gauge is user friendly in that it has a larger surface for grabbing and placing the stops on the shoulder or tip. (See *photograph 6.*) It also incorporates a slight amount of spring-loaded adjustment that will insure accurate placing of the blank to be cut. Accuracy is good when key cutting is involved.

The tightening knobs on the vise are still basically the same wing nuts on the 045 as the 025. No changes were really needed here and they left them the way they were. One change was made with the handling of the vise bar. The 025 used the carriage as your handle to control the speed and pressure on the cutter wheel while the 045 has a 4-inch handle to make for more control of the pressure and speed. This will make for a good change.

Both the 025 and 045 have the versatile four-way jaws that allow for the secure gripping of virtually any cylinder key for which the machine was intended. Additionally, both machines use the 23XMC cutter wheel. It is a mid-priced cutter that is quite versatile and the quality is good.

The 045 has a new feature called a carriage stop. The adjustable carriage stop prevents the problem with slamming the key blanks into the cutter wheel. Even though we know better, we have all done it when we were not paying enough attention. Having to replace a cutter wheel or two makes one a little more attentive, but the carriage stop will make life easier for those of us that tend to let our minds wander. Thank you ILCO.

One of the most usable changes ILCO made with the 045 is the introduction of a micrometer depth adjustment. (See *photograph 7.*) The 025 method of adjustment was a kind of hit and miss way of doing the necessary job. (See *photograph 8.*) With the new micrometer adjustment you can now be very accurate with the micrometer settings



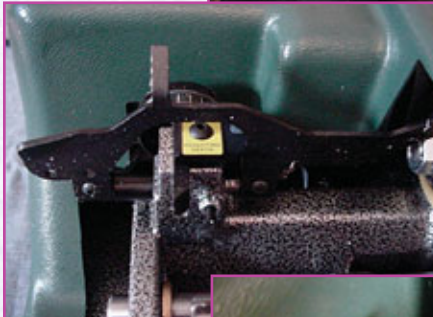
5. The 025 key gauge.



8. The 025 depth adjustment.



6. The 045 key gauge.



9. The 045 motor with the capacitor.



7. The 045 micrometer depth adjustment.



10. The chip cup.



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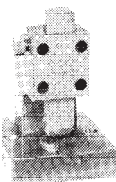
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being approximately .0015 inch. If a machine is easy to keep adjusted, it will be done more often and you will get more accurately cut keys. No more adjusting, cutting a sample, adjusting, cutting a sample, adjusting, cutting a sample etc., etc., etc.

The motor on the 045 is a major change. Although both machines use a 1/4 h.p. electric motor, the 045 has a capacitor start added to it. (See photograph 9.) The capacitor will make for a much easier start, especially in mobile applications where an inverter is used for the power source.

I use a 1500-watt inverter, and have a hard time getting the 025 to start in 20 below zero-weather. It hasn't been that cold yet for me to guarantee the 045 will be better in that kind of cold, but based on the other machines I have with the capacitor start, I believe the change will do the expected improvement.

One more change that will be seen on the 045 is the introduction of a cup to catch the key filings. (See photograph 10.) The way I look at it is, that is just that many less filings to get stuck in my fingers and that is another good thing.

The location of the circuit breaker on the 045 is another improvement. (See photograph 11.) The 025 had the circuit breaker in the back of the machine, while the 045 has it on the left side. This will make for easier use if the machines are mounted close to a back wall.

Probably the biggest negative about the 045 machine is the price increase over the discontinued 025. The 045 machine can be found in the \$425 price range, but the improvements make it worth while. As with any tool



**11. The 045 circuit breaker.**

purchase, you will have to weigh the cost versus the return and decide for yourself.

These are the most obvious changes made by ILCO when they introduced the 045 machine. I am sure they made some that we will never be aware of, and probably won't effect our decision to buy or not to buy. I would say the changes have been for the better and will be appreciated by the locksmiths in the field.

The 045 is filling a need that we have for a versatile machine with many advantages we will like and use. I have no reservations about recommending the 045 for any shop looking to upgrade their key cutting equipment. You can buy the 045 with confidence that it will do the job and will give you many years of valuable service, regardless of your volume or usage habits.

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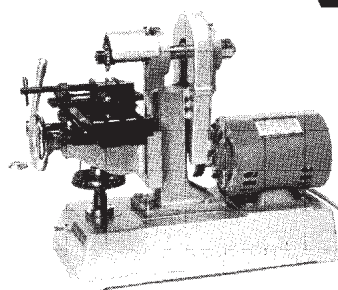


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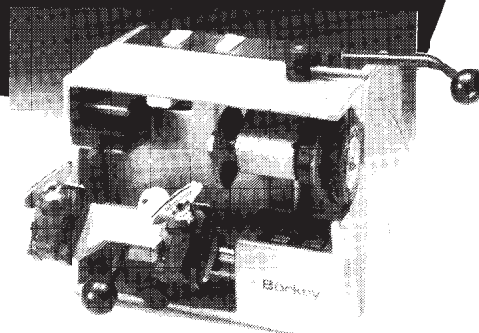


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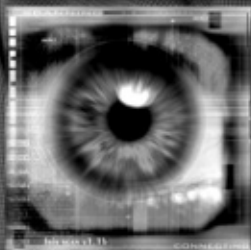
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by  
**Michael Hyde**

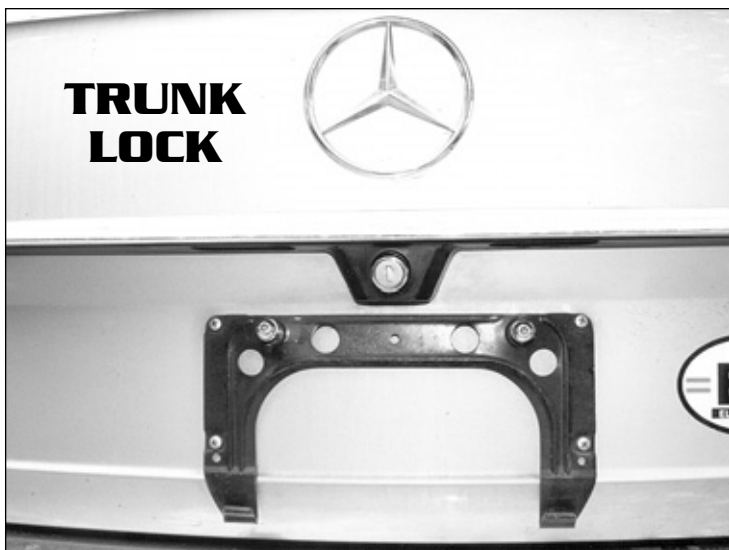
# 1989 Mercedes Benz SEL



**1.** This is the second part of a multi-part series to show different areas of servicing this common high security car. This car uses the Mercedes Benz 4-track high security keyway.



**2.** There are a few variations of the Mercedes 4-track key. You have the master plastic bow key with an alarm indicator, and the master plastic bow key without an indicator. There is a wallet key with an alarm indicator and a valet key. The valet key is missing the center groove cut on the blade. The red dot alarm indicator is for models with a factory alarm. The red dot is plastic and has no other purpose except to indicate that the vehicle left the factory with an alarm, nothing else.



**3.** The trunk lock is mounted into the outside trim of the trunk and rear body area. It's hard to tell with the trunk lid closed.



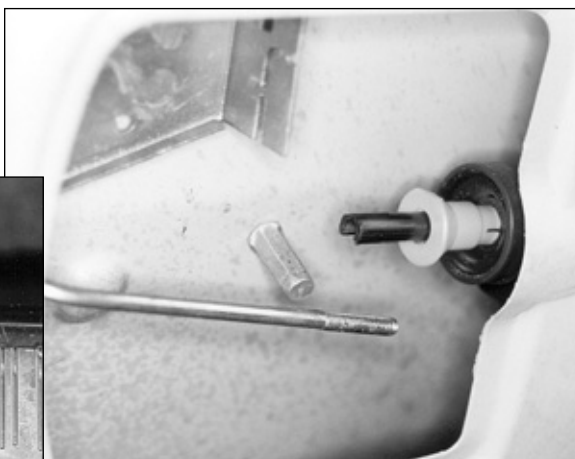
**4.** There is a long black piece of plastic trim that covers the rear opening of the trunk ledge. The trim unsnaps by gently pulling out and up on the inside edge of the trim.



**6.** One of the linkage rods on the trunk lock needs to be disconnected from the Central Locking system. After breaking a few of these, I finally figured out how they work. It seems so simple now, but at the time it wasn't. Gently pull out on the yellow connector.



**5.** There is a red sticker on the plastic trim that informs the owner "The trunk lock will also lock and unlock the doors".



**7.** While holding the linkage rod out, pull the yellow connector back and the middle black section that holds the linkage rod should slide out through the yellow connector.



**8.** The outside trim has six nuts that will need to be removed, two on each side and there are two in the center.

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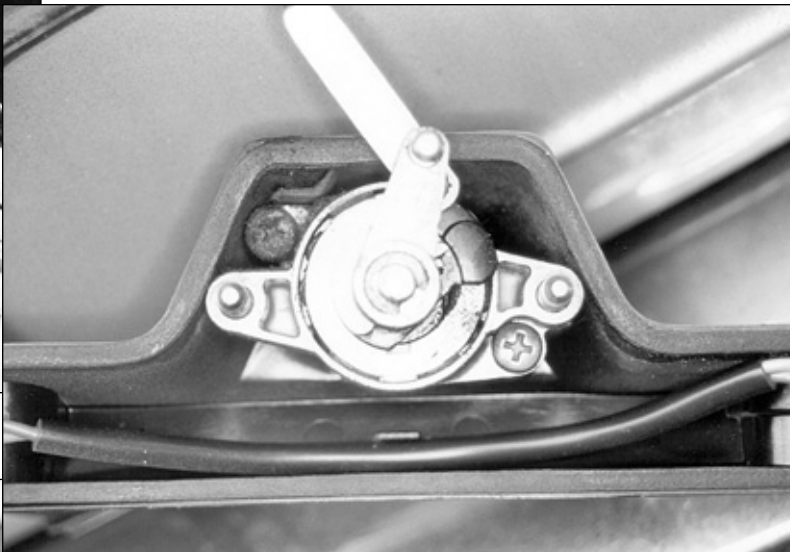
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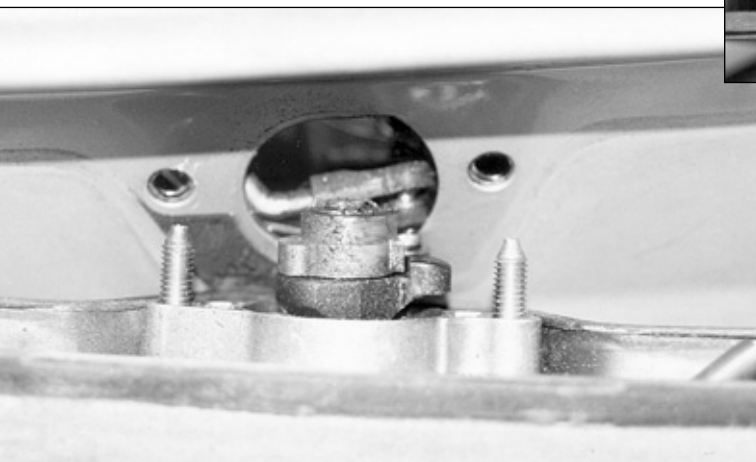




**9.** Now the whole trim with the lock can be removed.



**11.** There are two large Phillips head bolts holding the lock cylinder to the outside trim.



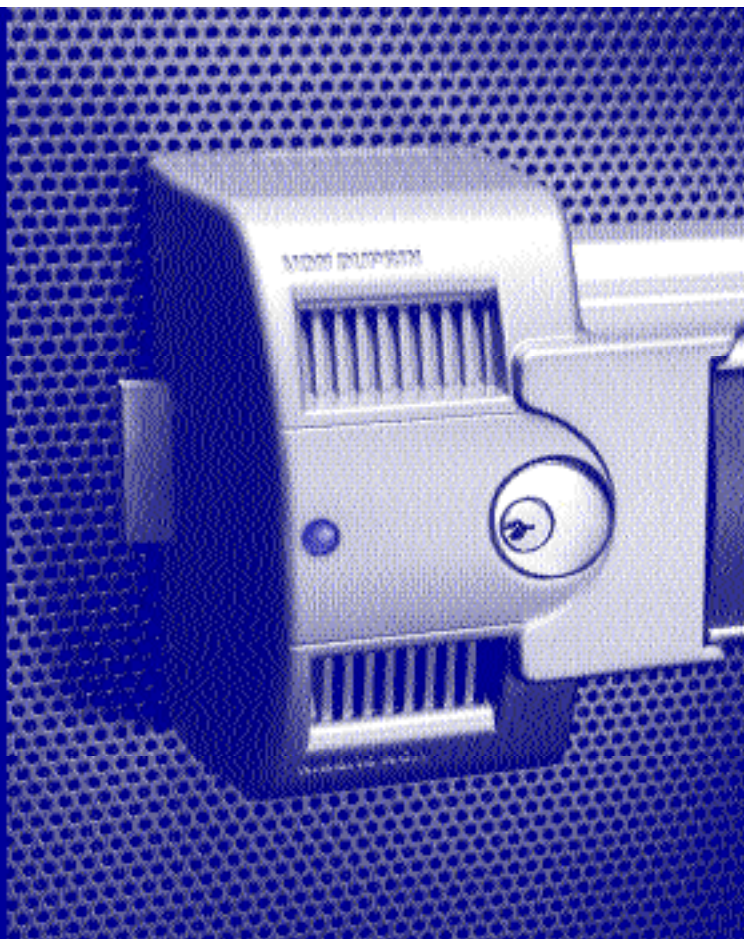
**10.** There are two linkage rods hooked up to the trunk lock cylinder. One of which we already disconnected from the Central Locking system. The other is a "Ball" type connector that can be unsnapped. It has a black plastic tip on it.

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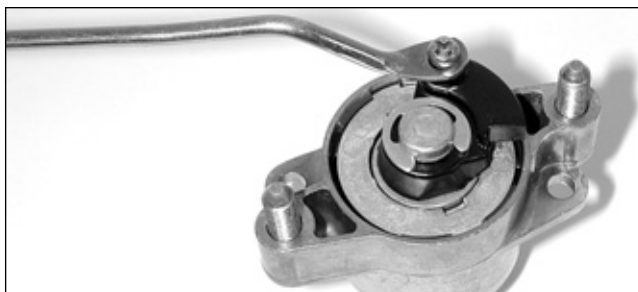
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**12.** Here is a view of the trunk lock cylinder removed from the car. The good thing about this cylinder from other Mercedes trunk locks is that you can disassemble this lock without a working key.



**13.** Remove the tailpiece on the backside of the lock cylinder. It is always a good practice to mark the positioning of the pieces when you remove them.



**14.** Push in on the gray metal ring and twist to remove the ring.



**15.** Behind the ring is the plunger spring.



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**16.** The lock cylinder housing is held to the chrome housing by tabs that are bent over the lock at the factory. The tabs can break if caution is not taken during disassembly.



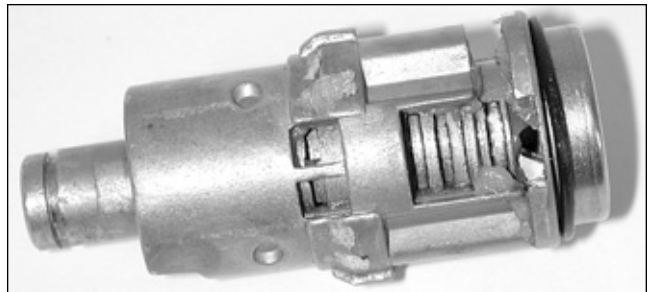
**19.** The lock cylinder will separate from the chrome housing when there is enough room caused by the tabs being bent back.



**20.** Here is a closer look at the chrome housing tabs. Special care is needed with these, it is easy to break them off or split them in half.



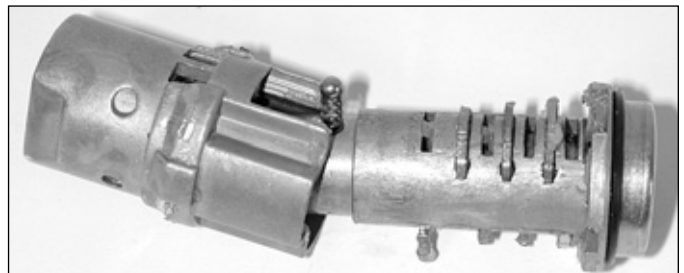
**17.** Since you will need to apply a lot of pressure, it is wise to stick the lock in a vise with a towel double wrapped around it to protect the chrome finish. I start out using a small flat bladed screwdriver to gently, but firmly pry out the tabs. It is also a good idea to rotate the lock so the tab you are prying out is solid with either the front part or rear of the vise. This will give you a firm base when tapping in a screwdriver to pry out the tabs.



**21.** With the cap removed the lock cylinder plug will now slide right out the front of the housing.



**18.** After I went around the whole lock with the small screwdriver, I then switch up to the next size in screwdrivers. Remember not to over extend the tabs, since you will need to re-stake them when you put the lock back together.



**22.** Be careful when removing the plug, some tumblers may fall out. There is also a spring-loaded ball bearing detent that will go flying if you are asleep at the wheel.

Continued on page 36

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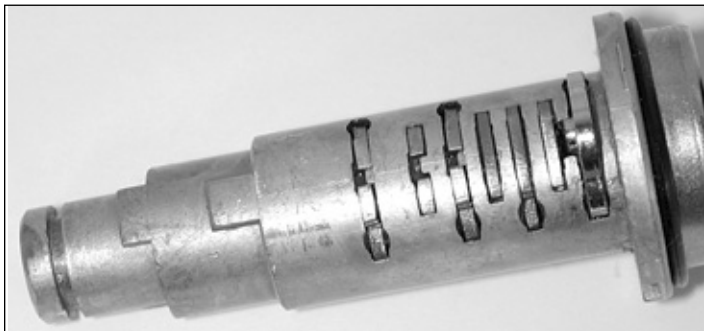
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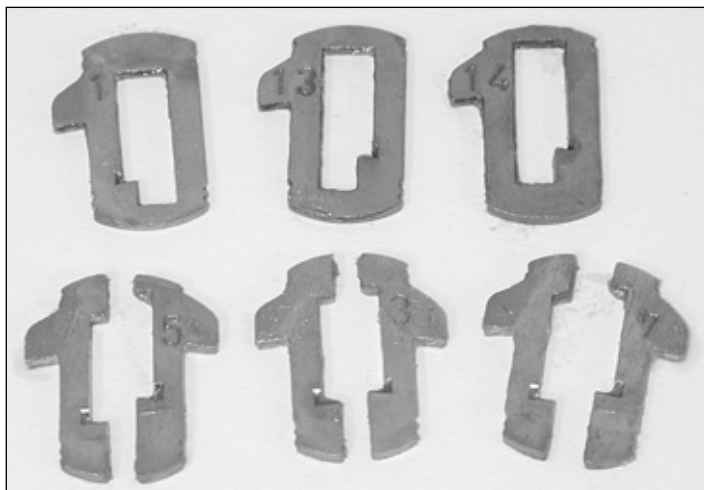




**23.** The trunk lock cylinder plug contains solid and split tumblers. There are 3 solid tumblers in the first three positions. Followed by 3 sets of split tumblers in positions 4, 5 & 7. This was not a typo; there are no tumbler chambers for this lock in position six from the bow.



**26.** To remove the lock handle, remove the 3 screws closest to the lower left hand corner of the glove box door, directly behind the handle.



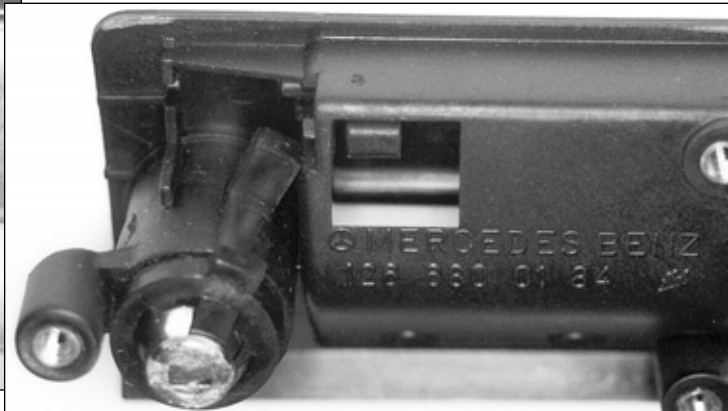
**24.** There are solid and split tumblers used in all Mercedes locks with a 4-Track system, except the glove box lock. The tumbler depths go from 1 to 5, the number 5 tumbler being your deepest tumbler.



**27.** With the screws removed the handle will pull off the door.



**25.** The glove box lock cylinder is built into the door release.



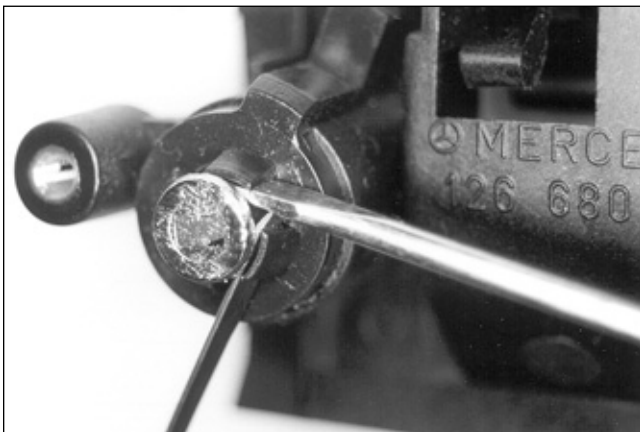
**28.** On the back of the lock handle is the plastic tailpiece for the cylinder plug.



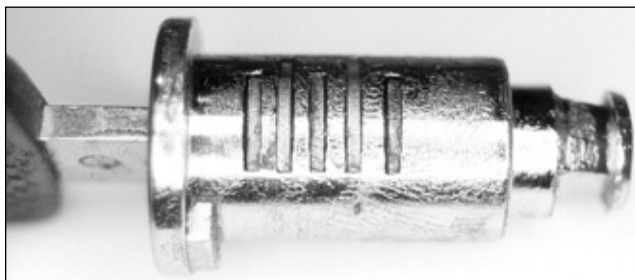
**29.** The plug cannot be removed until you take the tailpiece off, which is a little bit of work.



**31.** There are 4 tabs on the tailpiece. The plug will stay in with three tabs in case you break one. If you break 2 tabs it will still work, but it won't stay on with just 1 tab.



**30.** Use a small screwdriver and/or a lock pick to gently pry underneath the 4 plastic tabs so you can slide the plug out. Take your time to get up underneath the tabs, as they are very brittle.



**32.** There are five tumblers in the glove box lock cylinder plug. All are solid tumblers in positions 1 through 5, from the bow.

Continued on page 40

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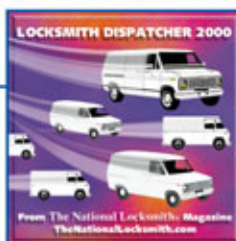
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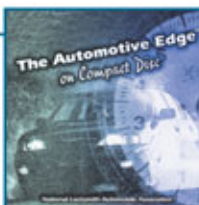
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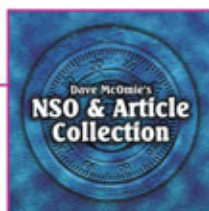


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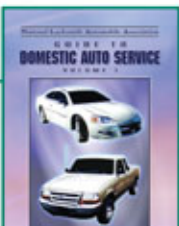
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NOTE: NLAA members will already have received these materials.



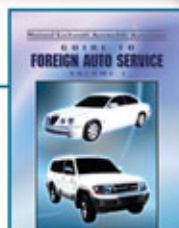
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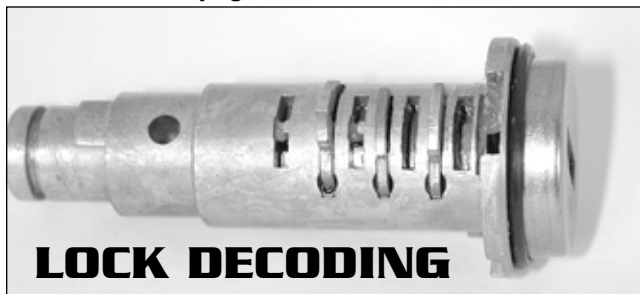
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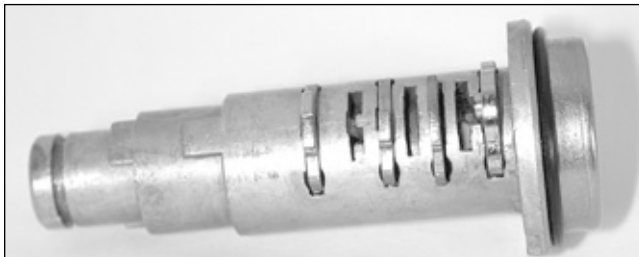
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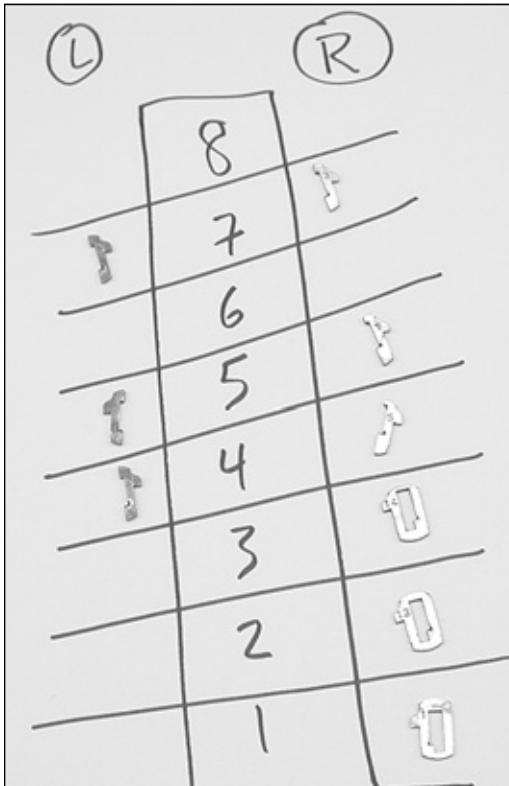


## LOCK DECODING

**33.** One of the biggest problems with learning High Security auto work is not being able to properly decode the lock cylinders. Here is a way of always getting it right. First hold the cylinder plug so the entrance of the keyway is facing your chest. Next, turn the plug so the first tumbler chamber is springing upward towards the sky. Pull out that tumbler and identify it by the numbers stamped on it.



**34.** To remove the next tumbler you must rotate the plug 180° so that the next tumbler chamber in-line will spring upward. Take out that tumbler. Never take a tumbler out from the bottom because you will lose track of its placement.



**35.** I make a diagram on a piece of paper where all the tumblers go. We know that this lock has 8 cuts on 2 different tracks. So I make a diagram from 1 through 8, bow to tip. Then I label the left side and right side. This comes in real handy when using Space & Depth Guide keys.



**36.** High Security Space & Depth Guide keys need to be made to the correct depths and positions. Somebody not knowing the MACS (Maximum Adjacent Cut System) will have trouble producing a good set. National Auto Lock produces all computer controlled cutting of guide keys with the proper MACS. All keys are originals and not copies of other sets.

## MAKING FIRST KEY:

**NOTE:** On some models the lock cylinder is integrated in the door handle, and on newer models the lock cylinder sits up against the door handle. In either case the removal procedure without a key is the same.

**METHOD:** It will be necessary to remove the door panel. We suggest removing the passenger side as this lock is the less worn of the two. Mercedes door panels have few screws attaching the panel to the door. The screws it does have are usually hidden. The panels have plastic hooks in them that lock into the door's sheet metal to hold the panel in place. The panel must be lifted up to remove, and do not lift outward, like standard panels. There is usually a hidden ten-millimeter bolt behind the top portion of the arm rest/door pull. The bolt can be seen after gently snapping out the seat control face plate and then getting behind the inside door release handle face plate. Unplug the panel light, to avoid breaking the wires attached to it.

Once you have the panel off, there will be 3 or 4 screws holding the latch assembly in place. These screws will use a number 3 Phillips head. Remove these screws. Remove the retaining screw on the edge of the door that holds the key cylinder in place, it may be behind a black plastic plug. Remove the larger black plastic plug that contains the alarm connector and unsnap the connector. The long tailpiece on the end of the key cylinder will have a "wing tip" to it. The wing tip operates inside the latch assembly, and can only be removed by rotating the key in the lock cylinder and gently pulling outward. Since you do not have a key it will be necessary to gently pull out the key cylinder as far as it will go and then gently rotate the latch assembly. It may work better to have the latch in the locked position or in the unlocked position.

Once again, you are trying to rotate the latch assembly in one direction while rotating the key cylinder in the other direction while gently pulling outward on the key cylinder. Be careful of the alarm connector wire. The part in the latch assembly that the key cylinder operates in is made of plastic, so you should keep this in mind at all times.

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Once you have the key cylinder out you will need to disassemble it until you can go no further. Be sure to mark all the pieces you take apart. You should be left with a plug and an inner housing. Prep a key with all number 5 cuts. You should be able to look down the tumbler chambers. Insert the prepped key and use four small pieces of metal to reach down in the tumbler chambers to bring the tumblers to the shear line in order to turn the plug for removal. Be patient as it may take some time to get all tumblers to the shear line so the plug will turn. After you have removed the plug you can then decode the wafers to make a working key to the doors. The tumblers will be stamped with a depth number.

## THERE ARE MANY VARIATIONS TO MERCEDES TUMBLERS DEPTH STAMPING:

Some Right full tumblers are stamped 11, 12, 13, 14, 15. Some are not.

Some Left full tumblers are stamped 21, 22, 23, 24, 25. Some are not.

Usually all tumblers are stamped with at least a depth number. If there are two numbers stamped on the tumbler, the depth is always the number to the right. Once you have made a working key to the doors, then progression cut position number 5R in the glove box. The glove box is all plastic, so do not force the key. Either it works smoothly or it doesn't.

Once you have made a working key to the doors and glove box, then progression cut position 7R in the trunk.

Once you have made a working key to the doors, glove box and trunk, then progression cut position number 6R in the ignition. Once you have a working key to the ignition, it will be the master key.

### HIGH SECURITY CODE SERIES: 300000-799999

Bow SPACING								Tip	Cut to Cut: varies	DEPTHS
.189	.289	.389	.489	.607	.700	.793	.886			
1	2	3	4	5	6	7	8			
.189	.289	.389	.489	.607	.700	.793	.886			1 .301
										2 .276
										3 .254
										4 .228
										5 205

MEASURED FROM SHOULDER

Key Blanks:	ILCO: S48HF-P	SILCA: HU39P
Reed Codes:	N/A	HPC 1200 C  N/A
Curtis Clippi:	N/A	ITL MFG: N/A
Pak-A-Punch	N/A	M.A.C.S.: 3

NOTES:



#### Key Usage: All

#### Spacing: Left Track

Model Info: 2 Different High Security Systems Possible

Bow											Tip	Cut-to-Cut
1	2	3	4	5	6	7	8	9	10	11		
0.189	0.289	0.389	0.489	0.607	0.700	0.793	0.886					Varies

Code Series: High Security

HPC1200CM: N/A

ITL Mfgr: N/A

M.A.C.S.: 3

Pak-a-Punch: N/A

Clipper Cam: N/A

Carriage: N/A

#### Key Blanks

Mfgr	Model Number(s)
Ilco	S48HF-P
Ilco EZ	S48HF-P
Silca	HU39P
JET	S48HF-PH

#### Depths

1	0.301
2	0.276
3	0.254
4	0.228
5	0.205
6	
7	
8	
9	

#### Key Usage: All

#### Spacing: Right Track

Model Info: 2 Different High Security Systems Possible

Bow											Tip	Cut-to-Cut
1	2	3	4	5	6	7	8	9	10	11		
0.189	0.289	0.389	0.489	0.607	0.700	0.793	0.886					Varies

Code Series: High Security

HPC1200CM: N/A

ITL Mfgr: N/A

M.A.C.S.: 3

Pak-a-Punch: N/A

Clipper Cam: N/A

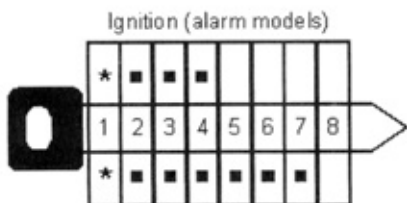
Carriage: N/A

#### Key Blanks

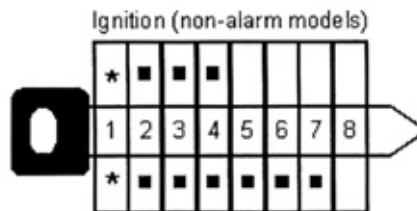
Mfgr	Model Number(s)
Ilco	S48HF-P
Ilco EZ	S48HF-P
Silca	HU39P
JET	S48HF-PH

#### Depths

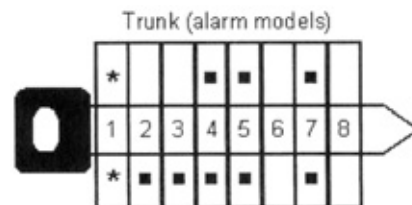
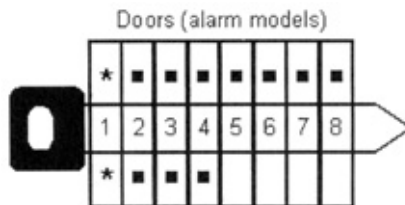
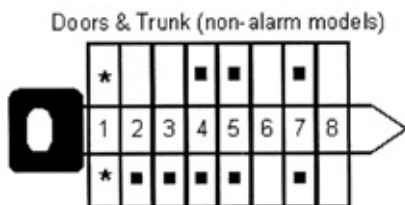
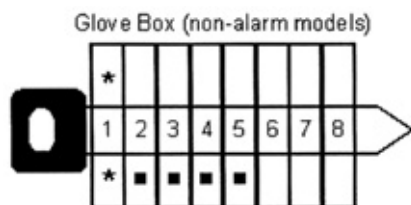
1	0.301
2	0.276
3	0.254
4	0.228
5	0.205
6	
7	
8	
9	



\*Tumbler positions #1 Left & #1 Right will contain a tumbler in one or the other, but not both. That tumbler position will be constant in all the locks. Once you have determined from the door lock whether it is a right or left, it will be the same in the ignition, glove, and trunk. Except factory replacement locks.



\*Tumbler positions #1 Left & #1 Right will contain a tumbler in one or the other, but not both. That tumbler position will be constant in all the locks. Once you have determined from the door lock whether it is a right or left, it will be the same in the ignition, glove, and trunk. Except factory replacement locks.



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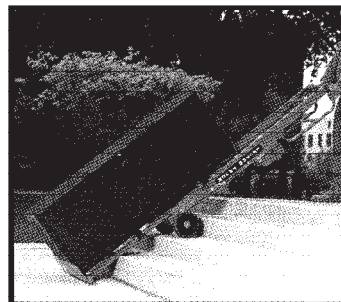
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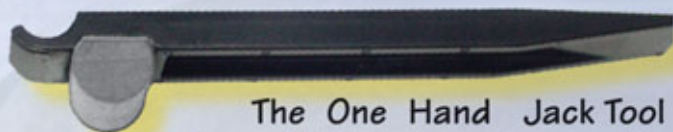


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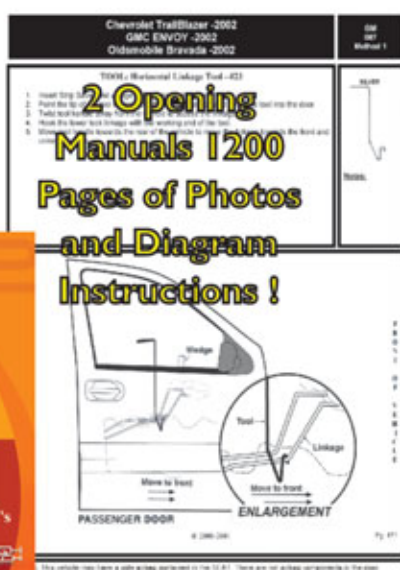
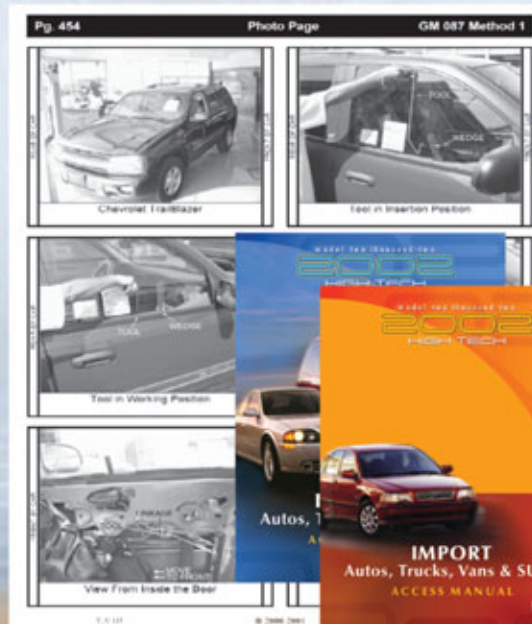
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# QUICK ENTRY UPDATE



by  
Steve Young

TECH TRAIN  
PRODUCTIONS

## 2002 Toyota Camry

**W**hen the 2002 Toyota Camry was first introduced in the summer of 2001, it immediately began giving locksmiths headaches, just as every previous Camry has for as long as I can remember. (See *photograph 1.*)

The new Camry incorporated a brand new 10-cut lock system, a new door lock mounting system, and a completely new door latch mechanism. All three of these features have already been introduced on several other vehicles, and will eventually become standard features for most Toyota products.

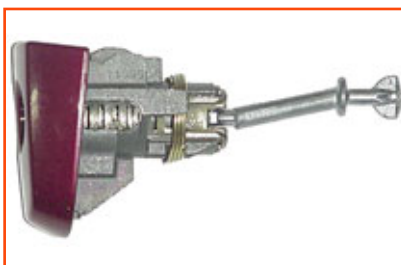
The new 10-cut locks crowd ten cuts onto the same key blank that previously had eight cuts. This is done by way of double cuts similar to the old Huf system that was used on Volkswagen for many years. Cutting these keys from code requires either a computerized code machine or a manual code machine coupled with a great deal of patience and attention to detail. At this time, it appears that the hand-held "clippers" will not be able to cut these keys at all.

The door locks are mounted into the door in a manner that is also reminiscent of the Huf system used on VW and Mercedes. (See *photograph 2.*) The lock cylinder is held into the door by a single #30 Torx® screw that can be accessed from the edge of the door. (See *photograph 3.*) It is no longer necessary to disassemble the door to remove the door lock. Since the code number for the vehicle is still stamped onto the passenger side door lock, this makes generating keys to one of these vehicles a lot easier.

The screw that holds the door lock in place also incorporates a new



1. 2002 Toyota Camry.



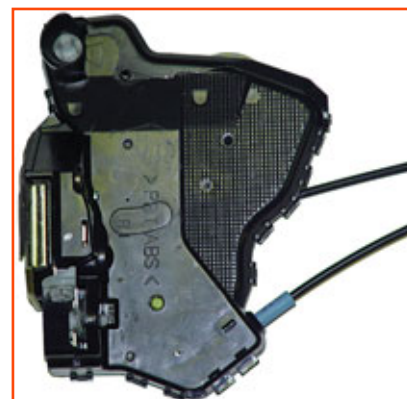
2. Passenger side door lock removed from the car. Note code number stamped on the side of the lock.



4. Nylon hub located in the latch that the lock tailpiece fits into.



3. This #30 Torx® screw located on the edge of the door is all that secures the door lock into the door.



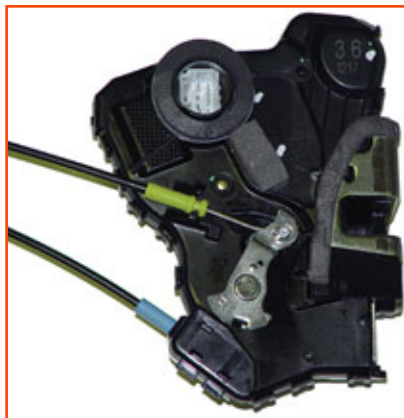
5. The door latch as it is seen from inside the door. Note that the cables are completely shielded.

feature that I wish VW had used long ago. A plastic "keeper" surrounds the screw and will prevent the screw from falling down inside the door when you loosen it. It is not necessary to remove the screw to remove the door lock. All that is necessary is to loosen the screw a couple of turns and then pull the door lock straight out of the door. The tailpiece of the lock is a shaft with an "X" shaped end that seats directly into a nylon hub that is a part of the door latch. (See photograph 4.)

The door latch uses two bicycle-style cables to connect the latch to the inside lock control rocker and the inside handle. (See photograph 5.) The bellcranks that these cables are attached to on the latch are completely shielded, so attacking them with a car-opening tool is a waste of time. While Toyota has used cable-operated latches on other vehicles, such as the RAV4, Tundra, and Avalon for several years now, the new Camry latch is a whole new ballgame.

This new latch is modular in design and is destined to become the "standard" latch for almost all Toyota

and Lexus vehicles. All of the door lock related electronics have now been integrated into this latch, including alarm functions, dome light control, power door lock controls and



**6. This side of the latch is mounted flush against the inner skin of the door with the electrical connector mated to a hole through the sheet metal.**

the power door lock motor itself. All of the electronics are connected through a single plug in the side of the latch. (See photograph 6.) The latch is pre-wired for all options

regardless of whether the car is equipped with those options or not. On vehicles that are equipped with an alarm, the latch automatically re-locks the door almost instantly when the alarm is triggered.

This alarm function is not new to Toyota or Lexus, but with the new latch, it does work somewhat differently. In the past, it was possible, with speed and teamwork, to open the door before the alarm could re-lock the vehicle. The new latch effectively prevents that type of attack in a novel way.


If you attempt to unlock the new latch with the same procedure that worked on previous models, the door will go into a "half-way" condition. When this happens, the door opens about a quarter of an inch and jams there. In that position, nothing that you can do will unlock or open the door until you re-latch the door completely. It is this "half-way" condition that led to the rumors that the Camry was equipped with a "deadlock system."

Even though the vehicle is not equipped with a true "deadlock system," once it is in the "half-way"

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position it might as well have a deadlock, the result is essentially the same.

The truth of the matter is that there is no “deadlock system” on the Camry, just a latch that behaves differently than previous latches. Once you understand the latch, it is actually easier to unlock than older versions. The key to unlocking vehicles that are equipped with this new latch lies in another new feature that is incorporated into the latch. On older Toyota vehicles, pulling the inside handle when the door was locked would have no effect. On the new latch, pulling the inside door handle on the front door will override the lock mechanism and then unlatch the door. (See photograph 7.)



**7. Unlike previous models, the door can be unlocked by pulling the inside door handle.**

This feature used to be standard on almost all cars until the 1960's when safety advocates urged manufacturers to disable the inside door handle whenever the door was locked. This was done in an attempt to prevent children from accidentally opening the doors while the vehicle was in motion. With the advent of airbags, children are now supposed to be confined to the rear seat, so the front seat is now “officially” adult territory.

It has long been recognized that using a handle system that overrides the lock can be a safety factor in helping adults to exit a damaged vehicle quickly after a collision. In fact, this feature has been standard on all European vehicles and Ford products for years. It is probably just a matter of time before all vehicles use this system. Of course the rear door handles do not override the lock mechanism since the back seat is “officially” kids territory now.

The easiest way to unlock the Camry, or any other Toyota or Lexus vehicle that is equipped with the new latch, is to use a tool to pull the inside door handle. It is not necessary to actually open the door with the tool; pulling the handle out

partway will unlock the door and allow you to open the door by pulling the outside door handle. On vehicles that are equipped with an alarm, pulling the handle out will unlock the door and because of the greater leverage provided by the handle, the power door lock motor, which is only about the size of your thumb, will not be able to relock the door.

There are at least three different ways to unlock the new Camry.

1. Use the Jiffy-Jak Vehicle Entry System to pull the inside handle on the front door.

2. Use the TT-1015 tool to operate the inside lock control rocker on the rear door.

3. Use the TT-1029 to unlock the trunk.

I listed these methods in order from the easiest to the hardest in my opinion. The Jiffy-Jak is by far the fastest method. My personal best time with the Jiffy-Jak on a 2002 Camry is 14 seconds, in front of a group of locksmiths on a rented vehicle to prove a point at a recent convention. I would never attempt to unlock a customer's car that fast. But, I would also never take more than a minute to unlock the car. The tool is used in the normal fashion, but instead of going for the inside lock control rocker, slip the tip of the tool behind the inside handle and twist the tool in order to lever out the handle.

I would only use the TT-1015 tool on the rear door if I knew for sure that the vehicle was not equipped with a factory installed alarm system. (See photograph 8.) When using the TT-1015 tool on



**8. The TT-1015 must be sharply angled and used to operate the inside lock control rocker if it is used on the rear door.**

### Quick Reference Guide

<b>Vehicle:</b> 2002-2003 Toyota Camry	models, optional on CE & LE models
<b>Direction of Turn:</b> (passenger side): Counter-Clockwise	<b>Code Series:</b> 50000-50999
<b>Tool:</b> TT-1015 or Jiffy-Jak Vehicle Entry System	<b>Transponder Blanks:</b> Ilco TOY43AT4, Jet TR47-PHT
<b>Lock System:</b> 10-Cut Toyota	<b>Non-Transponder Key Blanks:</b> Ilco/Taylor X217, Curtis/EZ TR47, Silca TOY-43
<b>Security System:</b> Transponder standard on XLE	

the rear door you will be attacking the inside lock control rocker with the tool, since the inside handle on the rear door does not override the lock mechanism. The positive side of using this method is that there is considerably more room for the tool to fit into the door on the rear door. Inserting and removing the tool will definitely be easier on the rear door than the front. But, you will have to angle the tool sharply to make contact with the inside lock control rocker.

If the vehicle is equipped with an alarm, it will relock almost instantly when you push the lock control to the rear. Another thing to remember about using any under the window tool such as the TT-1015 tool, is that once you insert it into the car you are committed. If you fail to successfully unlock the car, the tool will be extremely difficult to remove unless you find an alternate way to unlock the door. That is one reason why I always carry more than one TT-1015 tool.

I use the TT-1029 tool to unlock the trunk, primarily when the keys have been locked in the trunk. It is possible to gain entry to the vehicle from the trunk, but the above methods are a lot easier. Toyota and Lexus vehicles that are equipped with an alarm are also equipped with electronic inside trunk release mechanisms. When the alarm is triggered it not only relocks the doors, but it also disables the inside trunk release. The TT-1029 tool is inserted through one of the license plate screw-holes and gives you immediate access to the trunk without triggering the alarm. (See photograph 9.)



**9.** The TT-1029 tool is inserted through the left-hand license plate screw-hole.

The TT-1029 tool was originally designed when the rumors of a Toyota "deadlock system" were going around. The first car I had access to did not have an alarm so that I could learn the truth about the latch system. But assuming the worst, I looked for alternative methods to unlock the vehicle if some were indeed equipped with a "deadlock." When we learned all the facts, I decided to go ahead and put the TT-1029 tool into production, because I have had so



**10.** An emergency release inside the trunk is standard equipment on all 2002 and up Toyota Camry's.

many requests through the years for tools to help unlock trunks.

The TT-1029 tool takes advantage of the addition of a standard child-safety release handle inside the trunk. (See photograph 10.) The tool is inserted through one of the license plate screw-holes and attacks the linkage that attaches the inside trunk release handle to the latch. (See photograph 11.) Because the tool attacks the emergency release, it will unlock the trunk even if the customer has locked out the



**11.** Once the tool has been inserted into the trunk through the license plate screw-hole, it slips beneath the emergency release linkage. Pulling up on the tool will unlock the trunk.

release inside the car by removing the key in the horizontal position.

I have always believed that unlocking cars is much like fighting a war. You need as many weapons and tactics in your arsenal as possible in order to win the day. That is why I have always tried to list as many alternate opening procedures in my manuals as possible.

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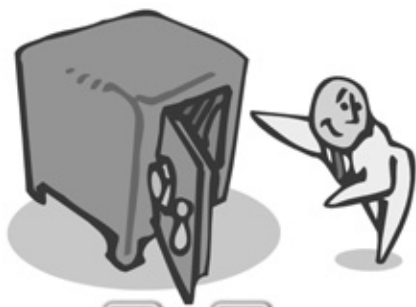
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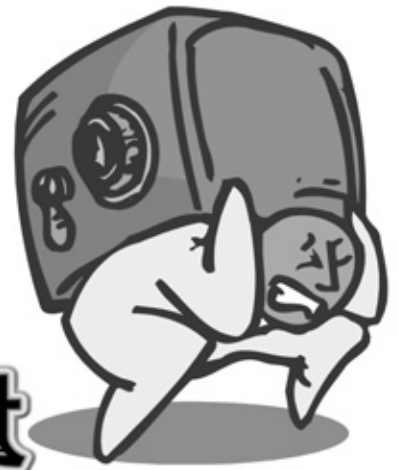
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# Safe



# Moving Equipment

## The Lectro-Truck

The Lectro-Truck is a battery powered, stair-climbing system capable of moving and manipulating loads up to 1500 pounds. The Lectro-Truck uses a dual-frame system, and an aircraft hardened drive screw to easily



manipulate stairs. Lectro-Truck has been proudly manufactured in the United States for the past 30+ years and has safe movers and installers worldwide that rely daily on the Lectro-Truck to move their product safely and efficiently.

## Skarnes Rol-A-Lift

The Rol-A-Lift from Skarnes is a practical way to move bulky and hard-to-handle loads. The units can handle large, awkward objects or heavy equipment that is difficult to maneuver or position, like safes, refrigerator cases, or machines.

The popular Rol-A-Lift models feature heavy-duty construction with weight capacities ranging from 1 ton to 6 tons per pair, and have optional side straps to secure loads for stable moving. In addition, large wheels allow smooth movement over bumps and



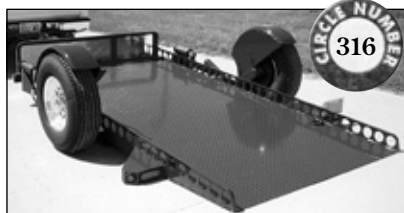
cracks of factory floors and adjustable forks with mounting pegs allow for positioning of forks to accommodate different width loads.

Available options include side belts to stabilize load movement and prevent slippage during movement and polyurethane swivel casters in single or dual wheel for floor protection and weight distribution. Four-position swivel locks are available on all casters.

## Lift-a-Load

The new Lift-a-Load Inclining Platform Trailer offers fast, efficient loading and unloading of cargo.

The trailer features a 68" x 11' 4" load carrying platform that can be hydraulically lowered to ground height. The built-in ramp then allows easy,



drive-on access for loading or unloading cargo. When lowered, the trailer allows a minimum angle ideal for low ground clearance or reduced grade ability vehicles. The simple operation, unique flexibility and enhanced safety allow for one person to load and transport up to 5000 lbs of cargo.

For greater durability, the Inclining Platform Trailer is constructed of HSLA steel. Diamond plate flooring, built-in tie-down rails, LED lighting with 7-pin connector and 2 wheel electric brakes complete this package.

Optional on-board battery, toolbox, aluminum wheels, spare tire and wheel with carrier and extra platform width are available to meet your needs.

## Defiant Safe Chariot™

**Question:** What makes one safe moving business highly profitable, while another safe moving business remains marginal?

**Answer:** Knowledge of the three key components of a profitable safe moving business:

1. Proper equipment.
2. Efficient moving techniques.
3. Proactive marketing.

Using this prescription to build it's own highly successful safe moving business, Defiant Safe Company of Dallas markets the Defiant Safe Moving System. Defiant, builder of the Safe Chariot™ trailer, goes far beyond the usual focus on moving equipment.

The Defiant Safe Moving System offers locksmiths a complete package, which includes affordable equipment plus Defiant's renowned 2 day seminar that teaches locksmiths how to make their safe moving techniques and promotions more efficient, and thus, profitable.



According to David Randall, a key developer of the Safe Moving System who has overseen the program for 9 years, "Our Company has been around since 1905. We know from both successful and challenging safe moves that it is simply not enough to have the proper equipment. Over the years we have conducted analysis of safe moving techniques used by our installers and others in the industry to make safe moving more efficient. As we became more efficient, we made more money. Also, active promotion of our service in the marketplace increased our number of safe moves. The result is that safe moving became a very significant revenue stream.

Out of this success came the idea for the class, which we have been conducting for several years. We don't presume that our methods are the only successful ones, but what we show locksmiths is the formula that has made our own safe moving business highly profitable."

## Ultra Lift

The Ultra Lift Model 1500 is a battery powered hand truck that enables one or two operators to move and install safes weighing up to 1500 pounds. The machine is fabricated of high strength custom aluminum extrusions, weighs just 120 pounds, and can be adjusted from 62 to 72" in overall height.

Ultra Lift customers use a combination of motorized lifting, leverage and balance to reduce operator effort and improve safety in all types of safe moves.

The Ultra Lift is a complete moving system from leveraged load break back, to moves up and down stairs, across level surfaces, and on or off trucks. The new Ultra Torque™ drive system makes it possible to move an 800-pound safe up or down a minimum of 400 stairs on a fully charged battery. For ease of operation, a single spring loaded switch controls all Ultra Lift functions.

Ultra Lift offers a complete accessory package designed specifically to simplify the most difficult installations. The StrongArm Extension Handle with its auxiliary power switch replaces the standard handle for moves on stairs where extra leverage and control are important. It adds a foot of overall height, providing additional leverage. The Vertical Move Assembly solves many tight location-moving problems by enabling installers to move safes in an upright position with a swivel caster system. The Portable Landing Extender adds 33' to short landings making some impossible moves possible. The Rough



Terrain Attachment, Low Profile Dolly and Vacuum Grip Handle provide additional capability and flexibility to the Ultra Lift system.

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## Tiger Line's Safety Tow

New from Tiger Line Equipment is the "Safety Tow" a two-wheeled trailer transporting system designed to allow one person to load and unload heavy cargos.

The compact "Safety Tow" features a winch attached to the tongue and a novel right-angle bed that tilts to stabilize the load. The bed can be lowered to ground level for ease in rolling the load aboard; a sturdy frame perpendicular to the bed secures the cargo over the center of gravity. The winch may then be used to tilt the bed and frame so the load



rests in a V-shaped cradle for secure transport. A sturdy telescoping tubular strut hinged to the tongue supports the cargo.

The "Safety Tow" can carry a payload of up to 3,000 lbs. It rolls on 235/R75/15 tires and is fitted with a hitch-type coupler rated to 5,000 lbs.,

plus two safety tow chains. Also standard are electric brakes and DOT-approved lighting with 4-pin connector. Options include surge hydraulic brakes, a spare tire and bracket, extra cargo straps and a 3,000 lb pallet jack.

Tiger Line notes that the "Safety Tow" can be pulled by existing service vehicles and provides efficient and cost-effective means of transporting vending equipment and safes.

The company also produces the well-known "Trailevator" hydraulic lifting-bed trailer and a variety of truck accessories including cranes and salt spreaders.

## Step Rider Takes The Muscle Out of Your Stair Mover

The Step Rider can carry up to 3500 pounds. The model 1800 is available in AC/DC and can easily be changed from one power source to the other even in the middle of a stair move.



It will lay itself down on the stairs and upright itself under power, and its polyurethane threads will not damage those stairs. You can carry your safes up any number of flights, and easily turn those right landings with no more than two men. (If landings are too small for your safe, there is an answer to that problem as well, it's called "Exparda" landings.) Remember, if you can't turn the landing, you can't complete the move.

When the "Quad Pods", a set of 4 well-arms, are extended downward from the main frame, the Step Rider functions as a hand truck and rolls on 4 wheels, carrying the safe at an angle with no weight on the operator. **TNL**

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# HPC

# Mini SPEEDDEX®

by  
**Sal Dulcamaro,**  
CML



Over the years I have had the opportunity to use or try a variety of key machines. In the category that I would call “portable” key machines, I have been generally less than thrilled at the overall operation and capabilities of the varied portable key machines. The portable key machines tend to not measure up very well in comparison to the larger and much heavier countertop key machines. In reducing the physical size of the machine, I would often find that the arc of movement by the much more closely spaced carriage would make the cutting of certain keys very problematic.

A case in point for one of the portable key machines was the Ford double-sided keys. The Ford (H51) primary/ignition key would duplicate with a rather dramatic tilt in the flat of the key cut surfaces. Depending on the particular cut depth, the angle in that cut position could range from mildly tilted to severely tilted, so that rotating the key in the lock one direction would lift the pin slightly higher in a chamber than rotating the opposite direction. Although slightly annoying, the tolerances of the auto locks usually allowed the H51 copies to still work. The (H50) secondary/trunk key was not as cooperative. With the ridge of that round headed trunk key resting on the back jaw of the key vise, the arc of the carriage had a more severe effect. The tilt of the cuts was even more extreme, so much so that I just gave up even trying to duplicate those keys on that particular portable machine, because the copies rarely worked.

I’ve justified those and other commonly held shortcomings of the portable key machines by telling

myself that making a key machine lightweight, compact and portable was asking a lot, and that beggars can’t be choosers. I was pleasantly surprised recently when I found a portable key machine that seemed to pass muster.

HPC has been making portable key machines for over 40 years and their current model measures up fairly well to the larger and heavier counter top machines. The HPC Mini Speedex is a portable key machine shown in *photograph 1*. It is very light weight and quite compact. A closer view of the carriage can be seen in *photograph 2* with a single sided key in the left key vise with the (shoulder) gage arm pulled down for gauging the key position. Like many of the full sized counter top machines, the Mini Speedex has four-way jaws and can cut a good variety of cylinder type keys (both single and double sided).

I have come to realize that four-way jaws come in quite a range of formats. The HPC machine has its own configuration and may vary significantly from the four-way jaws you may have on some of your current key machines. You may have to do some experimenting to figure which type key works best with which side of the vise. The wing nut (tightening knob) has been removed in *photograph 3* to provide a close-up view of one of the key vises (they are both the same). Each side of the key vise displays a pattern identifying the configuration of the front and back jaws of the vise for that side. I have removed the front jaw piece in *photograph 4* to reveal the gripping surfaces on both the front and back jaws for all four sides.



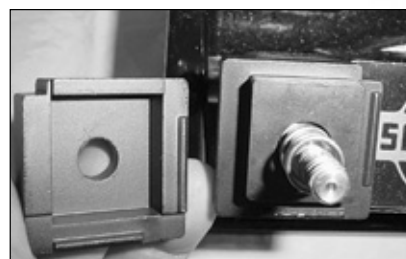
**1. The HPC Mini Speedex.**



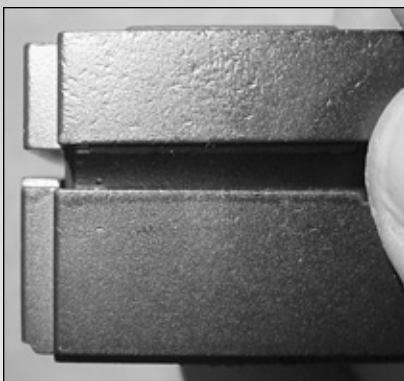
**2. A closer view of the carriage.**



**3. One of the key vises.**



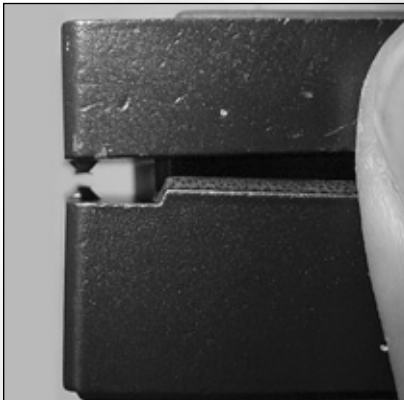
**4. The front and back of the jaws.**



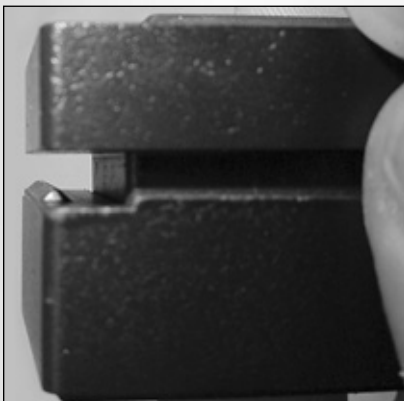
**5. The standard vise position.**



**6. Back of the vice.**



**7. Both jaw faces possess a raised ridge.**



**8. A ridge on the inside surface.**

The next four pictures are side views of the vise showing the gripping surfaces for each of the four key vise settings. The surfaces will either be flat or will have a slightly raised ridge on the face of that key vise jaw. The raised ridges will presumably protrude into a groove on the key or other long surface on the key. The vise settings begin with the standard vise position in *photograph 3* and the pictures follow the remaining three vise positions clockwise from that start position.

The standard vise position is shown in *photograph 5* with flat

gripping surfaces on both the front and back faces of the vise. In *photograph 6*, a raised ridge is only on the back face of the vise. Both jaw faces possess a raised ridge in *photograph 7*. *Photograph 8* shows the vise position that is opposite (in both position and configuration) to that in *photograph 6*, with the raised ridge on the inside surface of the front jaw. There will be some recommendations (in the key machine manual) as to what style key holds best in which vise side. With some experimentation on your part, you may prefer it different.

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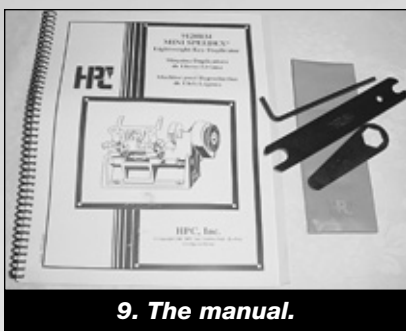
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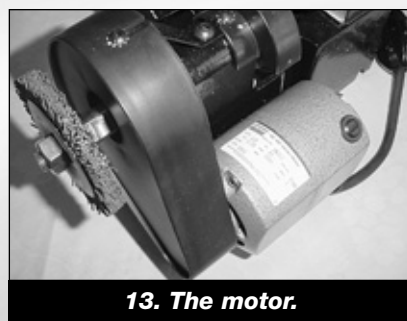




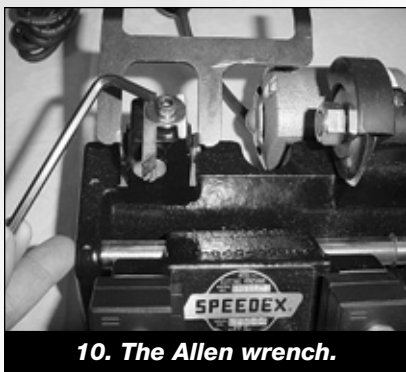
**9. The manual.**



**11. Where each wrench goes.**



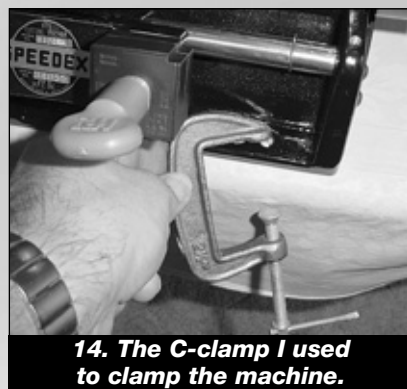
**13. The motor.**



**10. The Allen wrench.**



**12. An interesting way that HPC allows you to make a spacing adjustment.**



**14. The C-clamp I used to clamp the machine.**

Speaking of the manual, *photograph 9* shows it and a small tool kit that is included with the key machine in a small plastic pouch. It might be beneficial to look through the manual, even though I know that some locksmiths don't often like to read instructions. There are three tools in the kit: two flat (stamped) wrenches and an Allen wrench. Depth adjustment requires the use of that Allen wrench and a flat tipped screwdriver. The Allen wrench is shown in *photograph 10* near the Allen head machine screw that secures the copy dog/tracer guide from moving. When calibrating your machine's cut depth you will need to loosen that screw so that a flat tip screwdriver can be used to move the tracer guide by turning the slotted screw clockwise or counterclockwise.

The two flat wrenches are needed to change cutters on the machine. *Photograph 11* shows where each wrench goes. When replacing cutters, it is recommended that the cutter guard be removed first. The (hex shaped) closed-end wrench engages the cutter nut, and the wide side of the double-sided open end wrench grips onto flats on the shaft next to the deburring wheel. The cutter nut has left hand threads, so it will loosen clockwise and tighten counterclockwise. There is a hold down washer under the nut and in front of the cutter. Remember to place that washer back upon reassembly.

Recalibrating the spacing for a key machine is much less common than depth adjustment. In years past, I have had occasion to file one surface of the gage fork to compensate for a spacing error so as to match the spacing between guide and cutter. *Photograph 12* shows an interesting way that HPC allows you to make a spacing adjustment. The narrow end of the open-end wrench can grip the cutter side of the gage fork and let you bend it slightly left or right to correct your spacing. That method would not have worked with some of the other machines I've used that have thick die cast gage forks. Trying to bend it would probably just break it off.

### General Impressions

I tried out the Mini Speedex to give me a feel for how it would work out in the field as a portable key machine. I was generally impressed. A back corner view of the machine in *photograph 13* will help to illustrate a few things of interest. The small motor (not unlike those on sewing machines) is not as powerful as the much larger electric motors you typically see on the counter top machines. That is fairly typical of most other brand portables I've seen and is not a negative in my opinion. For a portable that I might be carrying around, I will trade the power for the reduced weight. The motor indicates 115-volt AC-DC series. I'm not certain, but that seems to suggest you could

get by with a (much cheaper) power inverter rather than a generator if you wanted to run 115 volt out of your service vehicle. The deburring wheel is something that I haven't typically found on many portable machines. For both cutting and deburring, remember that the reduced power of the motor will require that you operate more slowly than with your counter top machine. Listen to the sound of the motor and proceed as quickly as it will allow.

The arc of the carriage is comparable to standard size counter top key machines. I didn't have any notable problem with severe angles on the flats of my key cuts. Except for the power of the motor, the Mini Speedex felt like a full size key machine. It is very light weight. I was able to transport the Mini Speedex in its cardboard packing box very conveniently and quite compactly, I might add. I added one minor accessory to make it more effective. *Photograph 14* shows the C-clamp I used to clamp the machine to either a table or counter top surface so it wouldn't wander about while I was cutting keys. I gripped the machine at the base where there is a hole in the casting, for attaching with screws to a more permanent mount. The HPC Mini Speedex is available from all authorized HPC distributors. For questions contact HPC at 800/323-3295. **TNL**



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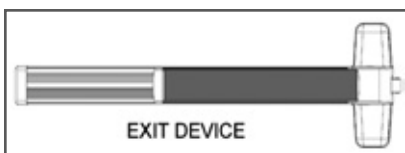




# GUARDING THE BACK DOOR

by S. Carl Dean, AHC, CDT,  
Sales Development Manager, IR Security & Safety Americas

**M**ost exit devices are used in high occupancy, high traffic, and often high abuse locations such as schools, airports, convention centers, and other places visited by large numbers of people who may be unfamiliar with the building. (See figure 1.) They also may be applied to provide safe emergency egress through openings that are used less frequently, but here they also incorporate an alarm. In this article, we will look at how codes affect these “back door” applications, in restaurants, stores or other facilities.



**1. Standard exit device.**

While a device may be required to provide an egress path through an opening in the side or rear of a restaurant, especially for people who may be unfamiliar with the facility, it can also leave the opening vulnerable to misuse by both patrons and employees. A dishonest patron may attempt to leave through the door without paying, while an employee could remove products or even worse, block the door open or tape back the latch to allow later re-entry. On a typical exit device, this can be prevented by incorporating a latch bolt monitoring system, an initial investment that could pay off in the long term. More commonly, an exit alarm or an alarmed exit device may

be used to both deter unauthorized use of the door and to signal its misuse.

## MEETING THE CODE

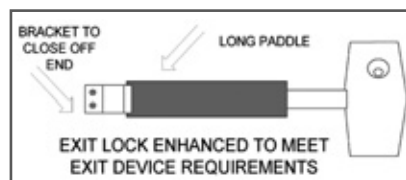
Exit devices are installed in response to the requirements of life safety codes, building codes and other applicable standards. Therefore, it is necessary to cover all the bases when applying an exit device. There are several reference standards that provide assistance. Regionally accepted codes for panic devices include NFPA and IBC, ANSI 156.3 and UL 305. A typical code statement is: “Only approved panic hardware shall be used ...”. Note that additional standards must be met when FIRE EXIT HARDWARE is used to meet building codes.

## SOME MECHANICAL REQUIREMENTS ARE

IBC 1003.3.1.9 (2000) NFPA-101 7.2.1.7.1 (2000) The active portion of panic hardware must be at least 1/2 of the Opening - stop-to-stop for singles or stop-to- adjacent door edge for pairs. Some alarms require a longer paddle to meet this requirement.

UL 305 3.3 (1998) The ends of the crossbar or pushpad shall be curved, guarded or otherwise designed to prevent catching of clothing of persons during exit. Some alarms require additional components to close the area behind the paddle to meet this requirement. (See figure 2.)

Occasionally a security person who sees a deadbolt on the main entrance of a facility may decide not to use a code-compliant exit device on other openings. (See figure 3.) This decision can be erroneous!

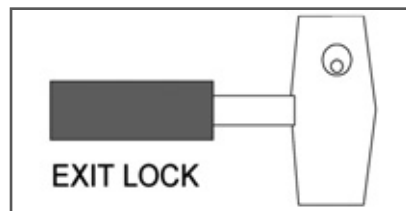


**2. Exit lock enhanced to meet exit device requirements.**

Some codes allow the use of a deadbolt on the main entrance as long as it has a sign reading “To be Unlocked When the Building is Open” and meets several other restrictions. It often is limited to a single door or one pair, and many codes prohibit the use of manual flush bolts or surface bolts in the path of egress. (IBC 1003.3.1.8.1 Bolt locks). To provide safe egress when the building is locked, exit devices may be required at other locations.

## VISUAL MESSAGE

The appearance of a piece of hardware can provide as much security as the device itself. A basic exit device may not provide enough “threat” in its looks. A piece of hardware that does not look substantial will provide little challenge to a would-be criminal. Some manufacturers have addressed this issue by designing an exit device that has an uncompromising look. In this case, bigger is better, and visual strength is as valuable as real strength.



**3. An exit lock.**



#### **4. Exit device designed to look intimidating.**

To be an effective deterrent, a device should be designed with the power to intimidate. (See figure 4.) This visual deterrent can be as important as the device itself, unless a Delayed Egress device is installed to delay prohibited use of the door.

Another deterrent found on some alarmed exit devices is large easy-to-read signage that provides a clearer message to those intending to misuse the opening.

### **INSTALLATION**

When selecting exit hardware, the installer must take into account the time and tools required for the installation. Another consideration is the limits on door width and stile on which a product may be mounted. Often alarms are used on remote flush doors that differ from conventional entrances. By selecting an alarmed device that meets the width requirement of all expectable sizes of exit doors (up to 48 inches) and comes as a complete unit (requires no add-on parts), the installer can be assured that the installation will meet the owners needs and is code compliant. Several alarmed products are available with a stick-on template to make installation quick and easy.

### **SERVICE**

When selecting a battery operated device that will be used where a store manager is responsible for maintenance, the location of replaceable batteries and ease of testing are critical selection points. Most products today are designed for easy service by store managers and security personnel. A building owner who wishes to eliminate battery replacement can use a battery eliminator (low voltage) power supply. Wiring of the power supply can be simplified by using an alarmed exit device with a body that extends the full width of the door. With a narrower exit lock, it may be necessary to snake the wiring across the face of the door. This may be aesthetically unpleasing and provide a point to attack the wiring.

### **DURABILITY**

Because exit locks are often selected on the basis of their initial cost, many products are constructed to meet minimal demands. If an owner considers that this device is put in place to protect thousands of dollars worth of merchandise or to protect occupants' lives, a \$20 or \$30 dollar savings may not be worth the risk. Here again, bigger may be better.

### **WHAT TO DO?**

There are several things an owner can do to protect property and occupants from misuse of exits. In order of effectiveness:

1. If the code allows, use a delayed egress exit device. If there is need for occasional employee use, add an access control system.

2. Consider a heavy-duty exit device with latchbolt monitoring and a hardwired monitoring system.

3. If code requires an exit device, use a product that provides the alarming capabilities as it comes out of the box and meets the requirements of an exit device. The active portion should be at least one-half the opening width, and "The ends of the crossbar or pushpad shall be curved, guarded or otherwise designed to prevent catching of clothing." For this application, also consider the addition of a hardwired system to eliminate battery replacement (and the chance of the unit being out of service because of a dead battery).

4. In areas where an exit device is not required by code, the nature of the location prevents physical abuse, the employee or customer will be deterred by a small device, and the owner has a well-regimented preventive maintenance program to replace batteries, the use of an exit lock may be warranted.

Always keep in mind the level of villain the opening is supposed to handle. Always consider the results of a misused opening.

*IR Security & Safety Americas offers a number of products to meet exit device requirements. For more information contact: Ingersoll Rand Comm. Security & Safety, 111 Congressional Parkway Ste 200, Carmel, IN 46032. Phone: 317-613-8944; Fax: 317-613-8139; Web: [www.irsecurityandsafety.com](http://www.irsecurityandsafety.com). Circle 321 on Rapid Reply. **IRL***

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# DORMA's 8600

## Door Closer Line

Within the past year, DORMA Architectural Hardware has updated and reconfigured its line of surface-applied door closers to simplify product selection and the ordering process. As a result, the line-up features a range of quality closers for virtually every aesthetic and functional need. And speaking of aesthetics, the realigned door closer offerings sport a family look, allowing you to maintain a consistent appearance while selecting the right closer for the job.

In addition, DORMA engineered an "integrated arm system" that allows arm interchangeability among closer bodies. When stocking DORMA's products, locksmiths and distributors can limit inventory expense by purchasing closers and arms separately. For each application, you simply match a closer with the desired arm functionality, dramatically lowering the number of SKUs you must keep on hand.

One of the additions to DORMA's door closer line is the 8600 series surface applied door closer line. This dependable ANSI Grade 1 product replaces several long-time DORMA door closers by offering a combination of high performance and flexible configuration. (See photograph 1.)

### A NEXT GENERATION PRODUCT

Ideal for a wide variety of commercial and institutional applications, 8600 series closers are available for use on interior and exterior doors. The line features field-adjustable spring power from sizes 1-6, making it suitable to meet ANSI A117.1 and ADA barrier-free requirements. Its narrow-projection body minimizes possible conflict with adjacent walls at 90 degrees.

The closer's integrated arm system benefits from the new Tight Lock™ arm attachment. A DORMA exclusive, the

Tight Lock system design provides a truer mechanical connection that results in extended service life and smoother opening and closing action over time. In addition to the standard arm, the closer can be used with dead-stop arms, hold-open arms, heavy-duty parallel arms, and track arms.



**1. The DORMA 8600 series of surface-applied door closers.**

The 8600 series is easy to use in retrofit applications by directly matching common mounting hole patterns.

Standard performance features include adjustable backcheck, which controls the opening motion, protecting pedestrians approaching the door, as well as the door and applied hardware. In addition, the closer has a standard backcheck positioning function. Accessible with the closer installed, the valve maintains an effective backcheck range on parallel arm applications.

Further, the 8616 closer features optional delayed action that is adjustable with a separate, independent valve. This "delay" cycle is usually adjusted for a very slow closing motion from

maximum opening through about 70 degrees, thus providing easier movement through the opening for individuals who for need extra time going through the door.

DORMA's 8600 series is available in standard aluminum, dull bronze, statuary bronze, dark duranodic bronze, gold and black painted finishes, as well as a wide palette of color-sprayed and architectural plated finishes. The closer has a modern, streamline cover standard; full plastic and metal covers are optional.

The 8600 series door closers feature an industry-best 25-year warranty.

### INSTALLATION GUIDELINES

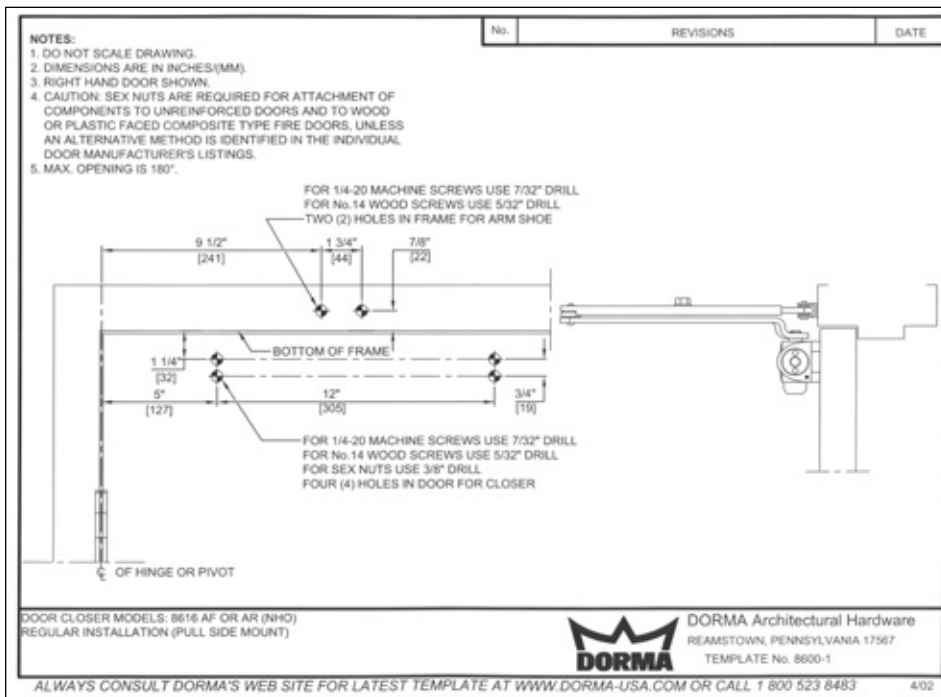
The DORMA 8600 series of door closers offers an assortment of installation options depending on the application and desired function. Here, we will focus on the most conventional configuration—a regular pull-side door mount with a flat-form arm.

Before installing any piece of door hardware, always read the installation instructions. This especially holds true with a recently introduced product like the 8600. Differences exist from one product to another, often resulting in slightly different installation procedures. Five minutes spent reading the instructions could save a prolonged headache down the road.

Also, survey the opening and door. Make sure the door is hung plumb and square, with no operational problems or binding in the opening. Problems like this will hinder the function of the closer and, long term, could decrease the life of the hardware.

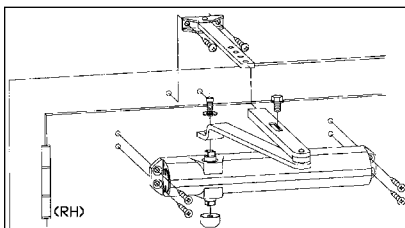
After determining the installation type (in this case, a regular installation), you must obtain the appropriate template, either from your packaging or from DORMA's website, [www.dorma-usa.com](http://www.dorma-usa.com). (See illustration A.) Use the reference lines to align the template according to the instructions. Don't get creative—consult the factory if unique conditions require special templating.

Use a center punch to mark the holes, then drill according to the template's instructions. On a metal door, use  $\frac{7}{32}$ " and  $\frac{1}{4}$ -20 tap. For wood, use  $\frac{5}{32}$ ". For sex nuts, use  $\frac{3}{8}$ ". (In retrofit applications, you may need a backplate to match up with the previous closer's hole pattern. This plate must be secured according to the template before you install the closer body.) Always use the fasteners furnished with the product. They have been designed and tested to provide optimal performance.



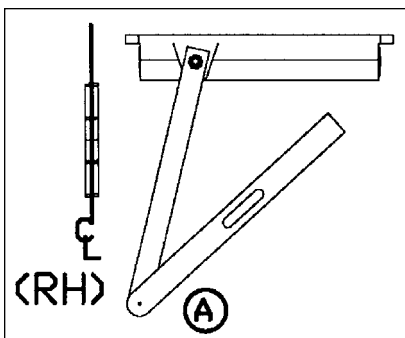
### A. Obtain the appropriate template.

Next, use the four mounting screws to secure the closer body to the door. Normally, the sweep and latch valves should face toward the hinges or pivots. (See illustration B.)



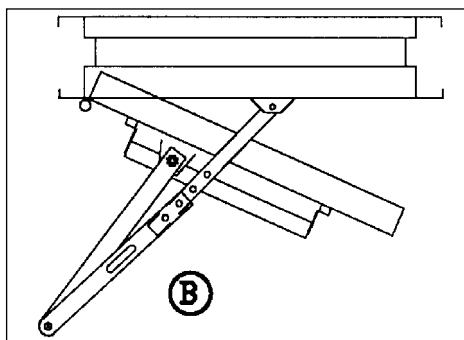
### B. Use the four mounting screws to secure the closer body to the door.

Index the connecting arm while placing it onto the pinion's spindle. (See illustration C.) Attach the arm to the spindle with the enclosed washer and screw. Typically, the arm is installed perpendicular to the door frame in a regular mount.

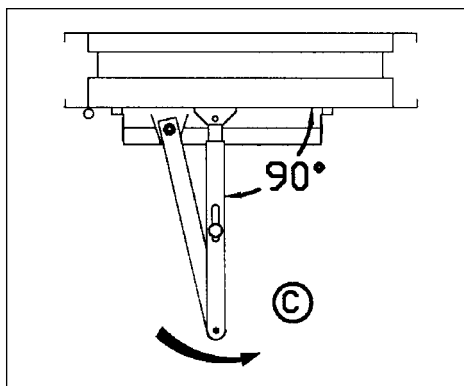


### C. Index the connecting arm.

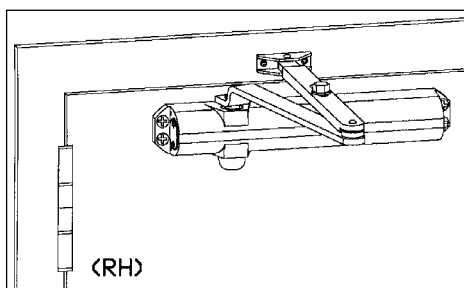
Attach the bar and shoe to the top jamb, making sure it extends perpendicular to the door frame. Position the arm over the bar, opening the door slightly if necessary. (See



### D. Open the door slightly if necessary.



### E. Insert the connecting arm screw.



### F. The closer should now be operational.

illustration D.) Insert the connecting arm screw down through the arm and into one of the holes from the bar and tighten it. (See illustration E.) With the connection complete, the closer should be operational. (See illustration F.)

## MAKE THE PROPER ADJUSTMENTS

Spending a few minutes adjusting the closer's function after installation may save the time and hassle of a service call in the future. So check the installation instructions to determine which door closer functions are available for adjusting on the unit you just installed.

The spring power should be adjusted to assure closing and latching of the door. On barrier-free doors, adjust the closer and test the door until the pull force is five pounds or less. Please make note that when adjusting a closer for barrier-free in order meet five-pound opening force, the door may not close and latch. In these cases, adjust the spring power enough to close and latch the door.

Sweep (maximum opening to 20 degrees) and latch (20 degrees to closing) should be set to permit smooth closing of the door in four to six seconds. Make sure it does not slam shut, as this poses a threat for personal injury as well as damage to the door and frame. Do not remove the valves or back them out beyond the closer casting surface.

Backcheck positioning should be set to provide a snubbing action when the door is forcefully thrown open, yet not so strong that it is overly difficult to push the door open.

Adjust the delayed action feature (if present) to meet the passage needs of the door. Consider the potential loss of heat or air conditioning that will occur if the door remains open too long.

Finally, test your work. Pass through the opening several times. Observe closely each of the components you installed and the adjustments you made to be sure the closer is operating reliably. Once you are satisfied, install the dust cap and cover, making sure they are affixed securely.

## ONGOING MAINTENANCE

Door closers are among the most reliable, hardest working devices on a building. An entrance to a busy storefront, for instance, might cycle 1,000 times a day...more than 350,000 cycles a year! Luckily, they are engineered to operate relatively maintenance free. A good installation is one that will require no thought about



the closer once it is installed and adjusted. Nevertheless, there are several steps one can take to maximize the lifespan and optimize the performance of all door closers including the 8600 series.

- Keep a copy of the installation instructions on file. They will be helpful if you need to adjust the closer, reinstall it after hanging a new door or order parts and accessories.

- Visually inspect the door closers for signs of abuse or vandalism that might lead to a future problem. Maintain your doors in good mechanical condition.

- Monitor performance, especially if strong winds or HVAC conditions impact the closer's ability to shut the door completely. Adjust the spring power accordingly.

- Check all fasteners at least twice a year and tighten if necessary.

## ***TROUBLE SHOOTING***

### **Door will not latch:**

1. Adjust latch valve counterclockwise to increase latch speed. (Do not back valve out past closer casting surface). Door should not slam in order to close.

2. Increase spring tension; if spring is adjustable.

3. Check for hinge bind, weather-stripping or other source(s) of resistance.

4. Check for positive or negative wind pressures.

5. Confirm door size is within the factory recommendations for spring size supplied.

6. Check templating to confirm closer and accessories have been located accurately.

### **No latch range:**

1. Adjust latch valve clockwise to gain latch control.

2. Check templating to confirm closer and accessories have been located accurately.

### **Weak backcheck:**

1. Turn backcheck valve clockwise to increase cushioning effect.

2. For parallel arm applications, be sure backcheck positioning valve has been set.

3. Check templating to confirm closer and accessories are properly located.

### **Closer will not delay:**

1. Be sure a delay closer was supplied.

2. Turn delay valve clockwise to increase delay time.

3. Check templating to confirm closer and accessories are located accurately.

### **Door slamming:**

1. Adjust latch and sweep valves clockwise.

2. Be sure the closer spring size is within factory recommendations for door size.

3. Check for overpowering wind gusts or air control systems problems.

4. Check templating to confirm closer and accessories are located accurately.

### **Door closing too slowly:**

1. Check latch, sweep and optional delay (if supplied) adjustments and adjust valves counterclockwise to increase closer speed.

2. Be sure spring tension is not set too weak for the recommended door size.

3. Be sure closer spring size supplied is within factory recommendations for door size.

4. Check for wind drafts or an air control system problem.

5. Check templating to confirm closer and accessories are located accurately.

### **Cannot meet 5.0 lb (A.D.A.) opening force requirements:**

1. Make sure an interior barrier-free closer was provided.

2. Check templating to confirm closer and accessories are located accurately.

3. Disconnect arm from closer, check force required to open door without closer.

4. If force to open door is more than 1/2 to 3/4 lb, check for hinge bind, weather-stripping, air pressures or other source(s) of resistance.

5. Check for overpowering wind gusts or an air control system problem.

6. Make sure door size is within the factory recommended size for use with a barrier-free closer.

NOTE: Ball bearing hinges and pivots should always be used with door closers.

### **Door will not open fully:**

1. Be sure closer and application chosen can achieve the desired opening.

2. Confirm templating to ensure closer and accessories are located accurately.

3. Be sure means of hanging door is appropriate for degree of opening.

4. Check for obstacles that prevent the door from opening the desired amount.

### **Door will not open 180 degrees:**

1. Be sure closer and application chosen can achieve the desired opening.

2. Confirm proper templating option was chosen. Appropriate option will normally be called out on template or instruction sheet.

3. Confirm 4-1/2" x 4-1/2" hinges, 3/4" offset pivots or standard throw continuous type hinges are used as door hanging means.

4. If using a special or unusual hinge, confirm that a special template was supplied.

5. Check for obstacles limiting opening.

6. A deep reveal condition on top of jamb applications may prevent door from opening the desired amount. Refer to catalog for proper adjusting arm length.

### **On Top Jamb Installations: With door closed and adjusting arm at a 90-degree angle to the door, the shoe will not reach the door:**

1. Check the reveal condition and reference catalog for proper arm article number to accommodate reveal condition.

### **Door closer pulling off the door and/or frame:**

1. Make sure hardware is securely fastened.

2. Confirm door and frame were properly reinforced.

3. Be sure door and frame were properly drilled (wood) or drilled and tapped (metal) for fasteners supplied.

4. Make sure fasteners supplied with door were used.

5. On composite doors and unreinforced doors, sex nuts should be used.

6. Be sure proper length sex nuts were used. Length based on door thickness.

### **Door closer and/or accessories are moving on the door and/or frame:**

1. Make sure hardware is securely fastened.

2. Confirm door and frame were properly reinforced.

3. Be sure reinforcement and closer hardware is located according to specifications.

4. Make sure fasteners supplied were used.

## ***FINAL WORDS***

DORMA's 8600 series of surface-applied door closers has been engineered for years of trouble-free service. With the proper model selection, installation, adjustment and ongoing maintenance, locksmiths and other door hardware professionals can ensure a functional, attractive door opening for as long as the door is operable.

*For more information about the 8600 series or to obtain a product brochure, call DORMA at (800) 523-8483 or visit [www.dorma-usa.com](http://www.dorma-usa.com). Installation instructions, templates and technical information are also available at DORMA's website. **TNL***

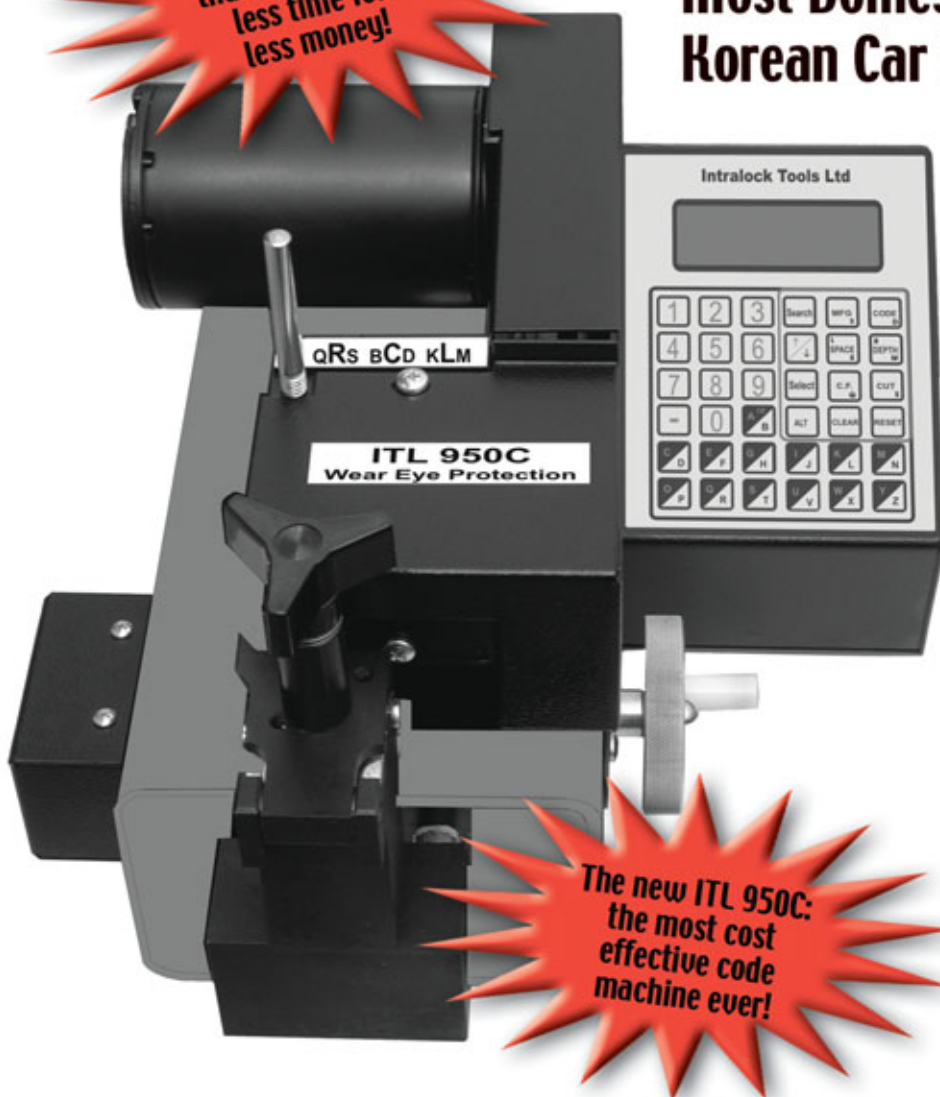
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# STATIC ELECTRICITY



by  
**Richard Allen  
Dickey**

**W**hat is the one common part found in a computer, cash register, radio, microwave oven, automobile or television set? It is the micro-chip. You will find it everywhere you go. The one thing I am sure it is not in, is my coffee cup. But the coffee maker has one! The micro-chip is here to stay. But what does this have to do with static electricity? Everything!

If you work on anything electronic, you should be made aware of the potential for damage from static electricity. I have taught classes on static electricity and the effects it can have on electronic equipment. Out of the hundreds of people I have talked with on the subject, almost none of them truly know how static is created or the simple ways to prevent damage from static electricity. By the time you finish this article you will know why it's important to you, how it's created, what damage it can do, and what you can do to safeguard the equipment you're servicing. Let me start with a history lesson.

Static electricity has been around a long time, but generally ignored and misunderstood until 1964 when the National Aeronautics and Space Administration (NASA) was building a rocket in a clean room. A clean room is a special room where contamination, such as dirt, dust and hair are eliminated. Everyone who enters the clean room must wear a white suit (no, not a white dinner suit!) and hat to help maintain the clean environment.

The rocket was covered with plastic to help keep it clean. It was rolled up during working hours and down again when everyone went home for the day. As work progressed, the igniter for the rocket was installed and grounded to prevent an accidental ignition. This is what was thought to be the proper thing to do at the time. Now remember, these people were rocket scientists, not shade tree mechanics. They papered their walls with degrees, not pictures.

With all of this education, no one understood static electricity or its dangers. The idea of unrolling the plastic cover at the end of the work day was completely acceptable. As the plastic unrolled, it induced a static charge of tens of thousands of Volts on the outside of the rocket. As the static charge continued to build while the plastic unrolled, it was looking for a place to discharge. It just happened to take the path of least resistance through the igniter, to the ground wire and on to ground.

Well, this discharge ignited the rocket engine, killing three engineers and putting eleven others in the hospital. The facility was destroyed. The reality and dangers of Static Electricity opened the eyes of the professional world. Things would never be the same. Now that you've had a history lesson, let's talk about how this affects you.

Static Electricity, no matter how much of a charge there is, can do nothing to you or the equipment you're servicing. It's the static discharge that causes damage! We have all felt the effects of a static discharge many times in our everyday lives. Walking across a

carpet then touching the door knob to open the door is a good example.

What you probably don't know is that you are discharging static electricity more often than you realize. You simply can't feel it. It takes a discharge of 3500 Volts before you can feel it, 5000 Volts before you can hear it, and 10,000 Volts before you will see it. Remember there is almost no current in a static discharge, so it won't harm you, but it sure will get your attention. It will also do a number on a sensitive electronic device.

How much of a static charge does it take to damage a component in an electronic circuit? Well that depends on the component. Different components will die at different voltages, and the range is great. Much of the equipment made many years ago could be hit with everything but a hammer and still work. That is not true today. The most sensitive device will die with as little as 30 Volts, while the really tough ones can take as much as 3000 Volts. Don't forget, you will never see, hear or feel any of these static discharges. You won't, but your electronics will.

You may wonder, how can I hurt anything if I don't take the cover off of the box containing the electronic device? Well, think about this one. Many wires in a car eventually end on a connector that plugs into the cars computer. If the wire you touch, just happens to be connected directly to one of those sensitive devices inside the computer, it is possible the component inside the computer could be damaged or destroyed. What do you think is on the other end of your VATS interrogator when you plug it into the ignition? It runs straight to the computer! Why aren't car computers blowing up every day?



The static discharge usually ends up at some muscle bound part of the car that likes to be hit with a hammer. But if you touch the right thing under the right conditions, it will happen.

For those of you that are interested, and I'll be brief, the inside of a micro-chip is constructed with two plates separated by gate oxide. (See figure 1.) There are thousands of these plates in a micro-chip. The voltage from a static discharge will vaporize the gate oxide. When the gate oxide cools, it can leave a metallic connection between the two plates, causing a short. (See figure 2.) That portion of the component has failed.

To prevent damage from static discharge, you must first understand how static electricity is created. I'm sure the "drag your feet across a carpet" trick is known by all, by why does it happen? Here is the all important rule of static electricity: Static electricity is created by the separation of two materials, one of which must be a relatively dry nonconductor.

You can't create static electricity by rubbing two pieces of metal together, or two pieces of wood. But you will create more static than you know what to do with when you peel the plastic wrapper off that new tool you just bought at Sears. The static charge on the plastic wrapper is why it refuses to let go of your hand when you try your best to throw it in the trash can.

When you separate two materials, (rubbing things together is the same as separating them numerous times) one of the materials will tend to remove electrons from the other. The end result is more positive electrons will be on one piece than on the other.

You could compare this to your car battery. If you connect a light bulb across the positive and negative terminals, the bulb will light. That's because the excess of electrons from one side of the battery are trying to get to the other side, so the two sides have the same number of electrons. If this transfer of electrons is allowed to continue, your battery will soon be dead.

When this happens to a static charge, it also means the static charge is dead. You no longer have more positive or negative electrons on one piece than the other, so you do not have a static charge. Try this demonstration if you have time.



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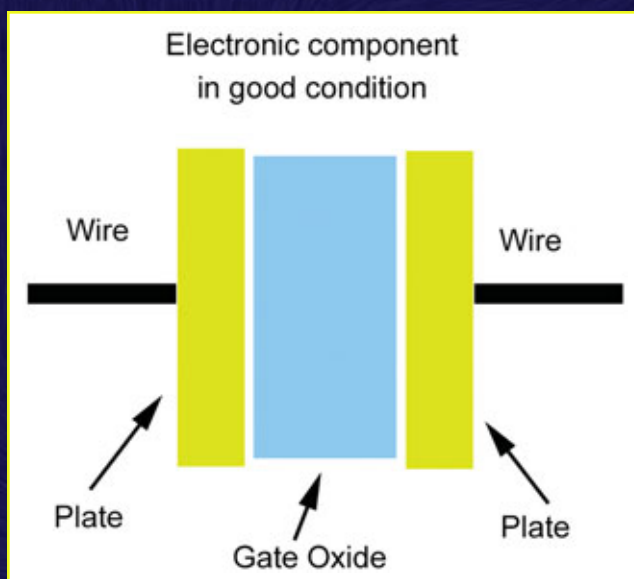
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**1. This is a simplified version of the inside of an electronic component. It has three parts. The microscopic wires that connect it to the circuit, and two plates separated by gate oxide.**



With a roll of Scotch™ tape, hold the roll in one hand and unroll about three feet of tape with the other hand. Do not tear the piece from the roll. While you continue to hold the roll and the outstretched three-foot strip, lower the center of the outstretched piece over a tray of cigarette ashes. The ashes will jump up and cling to the tape. It takes several thousand Volts of static electricity to raise cigarette ashes

one inch. How far did your ashes jump? One to two inches is typical for this test.

All damage to your electronic equipment is caused by the static discharge and not the static itself. So the key is not to have a discharge, or not to create a charge in the first place. It's very difficult to prevent the creation of static electricity. Simply walking across the carpet will cause some charging to develop on

your body, but we can control what happens to the charge. Here is how.

When you scoot across the vinyl seat in your customer's car or walk over the carpet at our customer's business, you build a static charge all over your body. This charge just sits there waiting for a place to discharge. There are three things that will accept a static discharge. Metallic carbon, metal and you. These things don't have to be grounded either! The doorknob in a wooden door isn't grounded, but it sure will accept a static discharge.

You can't have a static discharge by touching a non-conductor. Things like paper, wood or cotton will not conduct. However, if you reach out to shake hands with your customer and feel a shock, that is the discharge we have been talking about. Remember, it had to be at least 3500 Volts to feel it.

To prevent a static discharge, you either don't touch anything, (which means you don't get any work done) you touch something that will accept a discharge, (like a door knob) or you drain the charge off slowly. If you choose to touch something to

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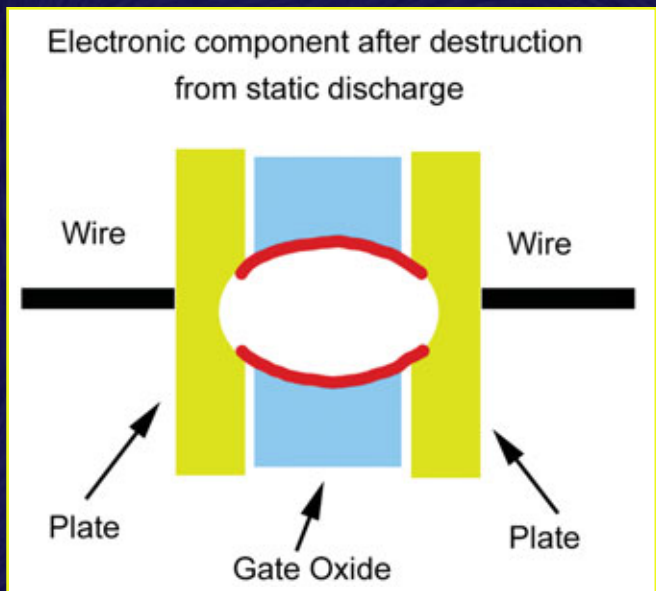
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discharge yourself, you need to remember that your finger is a single shot. Once you discharge, you can't hurt anything until you recharge again. Just remember, walking over to pick up your tools counts as recharging.

To use the preferred method of draining the charge off slowly, you will need something that conducts, but doesn't conduct well enough to allow a spark. Don't worry, someone else has already figured out what that material should be. All we have to know is that it's made into a simple static strap that attaches to your wrist on one end and some type of ground on the other. The metal case of an alarm panel or the metal dash of a car (if you can find any metal these days) will do fine.

The static ground strap should have a resistance of about 1 megohm or one million Ohms. The high resistance allows for a static charge to drain off slowly, but will not cause a danger to the user if you should come into contact with power. Don't use a piece of wire for a ground strap! If by accident you should come into contact with power, the wire attached to your wrist would be

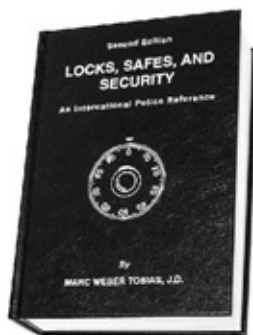


**2. When a component is struck by a static discharge, the gate oxide will vaporize and then quickly cool, causing a short or open between the two plates. The example shown indicates a short.**

like standing in a bucket of water and sticking your finger in a light socket. Neither is advisable!

A static strap can be purchased at your local electronics supplier. They are very inexpensive and a must when working around anything that is static sensitive. This is the only approved method of working on electronics equipment (alarm panels etc.) that is proven to prevent damage.

The business we are in is changing all the time. With every passing year we see more changes and more electronic devices. The smaller the device, the easier it is to damage. I love the idea of more electronics in the locksmith industry. It provides a challenge to all of us and fulfills a need created by the consumer. It's not hard to understand, just different. All you have to do is try! **TNL**



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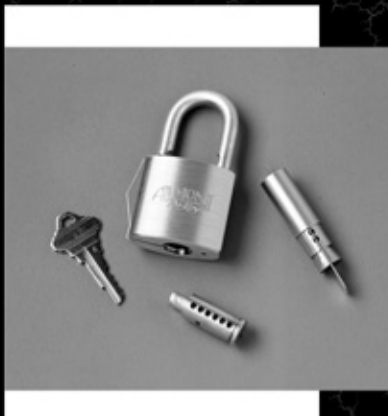
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# Beginner's Corner



By Ken Holmlund

## In the Toolbox, Part 1

**T**he purpose of this series of articles is to give my opinion concerning the tools I have personally used in my 20 years of locksmithing and hopefully help someone who is just making a decision about which tools they really need and will use. I am not going to compare various company tools that do similar jobs, as that would not be fair to the toolmakers with which I have no experience. It is my belief that most of the tools on the market are well made and will perform the jobs they were intended to do, or they would not be available for very long. Quality tools are a must for any working locksmith, and poor quality tools will not last in the marketplace.

I remember when I was just starting to get into this fascinating profession. I knew there were some tools I had to have, like a key duplicating machine, picks, pinning kits, car opening tools and the like. I found many manufacturers were offering these tools and had to rely on the advice of the people I worked with and knew to get the best ones for me. Even today, I still do the same thing. I am currently in the market for transponder equipment and am asking for advice from locksmiths that have used the ones I am considering. Nothing beats the input from someone that has used the tools in the real world. That is what I will try to give you in this series of articles.

My intentions are to cover several tools per article, complete with pictures of the tools in use if possible. Some times I will cover more tools since they are closely related for a type of job. Again, I am not here to compare brands, just to advise which tools are needed for a given service procedure.

### —The Basic Tools—

I hope the more experienced members of our profession will bear with me as I begin this series, as I will be covering some ideas and tools that are old hat to them. We must remember that many new members enter this line of work on a monthly basis, and this series is aimed at helping them get off on the right foot.

The best piece of advise I can give anyone going into any profession is to get the best tools he or she can afford. By all means, do not skimp on the basic tools such as screwdrivers, chisels, hammers and the like. Get good quality and look for companies that will replace the tools if something should happen to them. I use a lot of Snap-On and Craftsman tools and have had very good luck with them. If you purchase a tool from either of them and it fails for any reason, they will replace it without question. This is especially important for screwdrivers, since they are a fundamental tool in our assortment.



**1. A flat blade and #2 screwdrivers.**

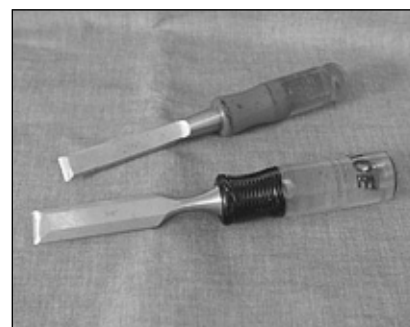
Speaking of screwdrivers, they come in many sizes and lengths. A good flat blade and #2 Phillips are a must. (See *photograph 1.*) Be sure to handle the tools before purchase to be sure they feel comfortable in your hand. Get ones with a handle large enough to give you a good bit of leverage. You will need it. Larger bit screwdrivers are often needed and should be considered as you can afford them.

A good quality 1/2" drill motor is another important purchase. (See *photograph 2.*) Be sure to get a variable speed, reversible model. I have found both Makita and DeWalt to be excellent brands, but would shy away from the drills aimed at the homeowner market. They do not hold up under our level of usage. Purchase a 3/8" drill if you can afford both, and again, make sure it is variable speed and reversible.

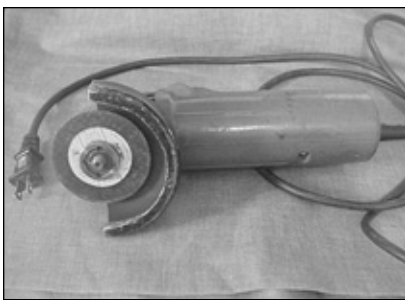


**2. A good quality 1/2" drill motor.**

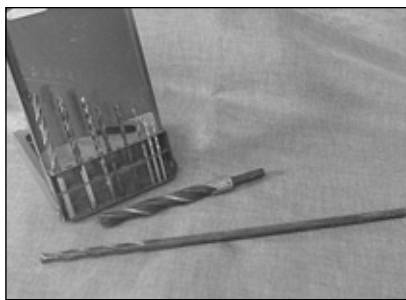
Chisels are another basic that are a matter of personal preference. I use a 1/2" and a 1" and have found that they serve me well. (See *photograph 3.*) It is imperative that a good edge be maintained on the chisel, so quality comes into play here as well. Dull chisels make for shoddy work, and that is not what you want to leave in the customers mind. Remember, they will be seeing your work for several years, and although they may not comment to you about the bad installation, they will remember who did the work.



**3. Two sizes of chisels.**



4. 4" Grinder with cutter wheel.



5. Drill bits and index.

Much of our work is done in the field and small portable power tools are a must. I have found my 4" grinder to be an invaluable tool. (See photograph 4.) You must have access to 110 power to use it, but it sure saves a lot of time and is very versatile. I have used cordless grinders, but found them to be lacking in power and longevity of working time. I recommend the corded model be purchased first, and add the cordless later.

Drill bits are a major expense and seem to be a never-ending purchase, especially in the smaller sizes. (See photograph 5.) There is a lot of disagreement as to which is the best type, but my feeling is that you should experiment with the different points and decide for yourself. I don't recommend

buying the cheapest ones on the market, but there is no need to mortgage the business to buy the most expensive either. Keep a good supply of sharp bits available and you will be well served. I find buying the sets is a cheaper way to get started and then fill in, as you need them due to breakage or misplacing them. By the way, they make easy gifts for the family to buy you for birthdays and the like. Not very romantic, but they sure are appreciated.

Bench grinder, drill presses and the like are nice, but not an absolute necessity. (See photograph 6.) I do recommend a good mid priced vise, but if you are mobile like I am, make sure you don't get one too large for the space you have available. (See photograph 7.) You



6. Drill Press.



7. 4" vise mounted in mobile shop.

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### 8. Invest in a good set of sockets.

will not need the large economy size for this type of work. A four-inch vise will do nicely.

It has been my experience that when you buy a cheap set of sockets, you will pay dearly for them with skinned knuckles and bloody fingers. Invest in a

good set of sockets and a good handle and it will serve you for many years. (See photograph 8.) I suggest the purchase of sockets like Craftsman or Snap-On because they will guarantee them for life. If you are going to be working on foreign cars, a metric set will be needed as well as a standard one. Some sockets are now available that contain both metric and standard but I have not used them so I have no recommendation concerning that type of tool.

Where hammers are concerned, I like Stanley products. They are reasonably priced and are available in a wide variety of sizes. I suggest two sizes of ballpeen hammers because of the versatility you have with them. (See photograph 9.) I prefer the small hammer



### 9. Two sizes of ballpeen hammers.

for marking keys because I find it has less bounce and therefore I get fewer double markings on keys. If you are going to be installing many deadbolts or doing much in the line of woodwork, a good claw hammer is your ticket.

The purchase of pliers is just like the sockets. You get what you pay for, and if you choose to buy a cheap pair it will come back to haunt you at a very inopportune time, like when you are on a ladder stretched to the limit. Pliers are critical to our work and I feel you will need at least three kinds. The channellock or waterpump pliers are used frequently and a couple of sizes would suit you well. Needle nose pliers are great for getting into small places but do not have much strength for twisting. Regular old run of the mill pliers will



### 10. Pliers are critical to this work.

come in handy everyday and should be in every toolbox. (See photograph 10.) Good quality pliers can be purchased at your local automotive parts house, but ask them for suggestions on the brands to get and ask about the guarantee. If they are not guaranteed, don't buy them.

I know I have talked about tools that everyone thinks are too basic, but they needed to be covered. In the next article, I will discuss some of the basic needs unique to the locksmith business. My advice is not to rush out and buy every tool you think you will ever need. Analyze your business and see where you want to go with it before making a purchase. If you do not plan on doing automotive work, the tools specific to that facet of the business would be wasted money.

See you next time. **RL**

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# The Lighter Side

*There's Nothing Common  
About Common Sense*



by Sara Probasco

**T**hat was Mrs. Grayson. She's locked out again," I told Don as I hung up the telephone at the store, the other day.

"Tell me she hasn't forgotten her push-button lock combination again."

"Fraid so."

"Why doesn't she use a number she can remember, something like her birthday or a familiar phone number?" Don grumbled.

"I asked her about that," I said. "It seems she took some kind of personal-security course at the senior center, recently, and they advised against using obvious numbers. They said it was too easy for a thief to figure out."

"They do have a point, but at least, that way, somebody would be able to get in."

"That is, if the locks don't develop Alzheimers."

"What?"

"Remember that woman who couldn't get her electronic locks to work, after she'd had some repairs done to her car? The mechanic apparently disconnected her battery cable for one reason or another, and—unknown to her—the keypad combination reverted back to the original factory numbers."

"Oh, yeah. When I told her the computer had apparently lost its recent memory, she said she didn't know the darned thing could develop Alzheimer's." Don sniggered. "I'd forgotten about that."

We find that absentmindedness, forgetfulness, and just plain carelessness are the major causes of keys being locked in vehicles. Obvious as this may seem, some

situations are simply not your run-of-the-mill lockouts.

You may remember hearing about a couple in Florida who stopped by to have an extra set of car keys made before taking their family on an outing at the beach. They had locked themselves out of their car once before, so this time, they weren't taking any chances. He took one set of keys and gave the other to her.

This is the story they told the locksmith, later in the day:

"Everybody was in their swim suits, so we put everything we wouldn't be using into the trunk of the car, for safe-keeping," he said. "As I was about to slam the trunk closed, I stopped and shouted to my wife, above the roar of the surf, 'Honey, have you got your keys?'"

"She held up her purse and pointed to it with a nod. I smiled and displayed my set for her to see before putting them into my swim-suit pocket. Then I slammed the trunk down and grabbed an arm-load of beach towels, a couple of chairs, and an umbrella. The cooler was sitting there, full of cold drinks and picnic food, and my wife had gone on ahead of me. Rather than leave the cooler unattended, and unable to carry it then, I decided to leave it in the trunk and let the kids come for it later, when it was time to eat. I opened the trunk to set the cooler inside and was about to return the keys to my pocket, when I got this bright idea that it might be safer to stow them in the cooler, instead. That way I wouldn't run the risk of losing them on the beach or in the water. Besides, my wife had her set with her, in her purse."

"That's about the time I decided we had brought way too much stuff," the wife chimed in. "When he passed me on the way to the water's edge, I was dragging an extra lawn chair, along with all the other stuff. He said he'd left the cooler behind, so I decided to take the chair back, rather than drag it all the way to our picnic spot. I went back, unlocked the trunk and tossed the chair in. As I started to close the trunk, I took a look at my big, bulky purse and decided I didn't really need it, either. The only things in it that were important were my sunscreen lotion and my keys. The lotion would fit in my beach-coat pocket, and my husband had the other set of keys, so I zipped up my purse and tossed into the trunk."

Remembering, her husband grimaced as he said, "Just then, I looked back and saw what she did. I dropped everything and began frantically waving and shouting, 'Whoa! Wait! Don't close the trunk. My keys are in there,' but she didn't hear me."

"Yes I did. I just couldn't understand what you were saying."

"All I know is, I saw you reach up and grasp the trunk lid and slam it down. Then you hollered back at me, 'What did you say?' But by then, it was too late."

I shook my head sympathetically.

"Well, at least they tried," I said. "It could have happened to anybody, I guess."

"Maybe, but anybody with a grain of sense would have double-checked, before locking their keys in the trunk," he said matter-of-factly. "Wouldn't you?"



Deciding not to answer that one, I changed the subject.

"The auto lock-out tale that beat all, in my book, was the group that were up-river a couple of years ago and couldn't get their trunk open, despite having the key. Remember?"

"Was that the group of two women and a whole passel of kids that packed all that stuff in the trunk—big stuff, like inflatable rafts, and coolers, and chairs."

"Right. Along with all their clothes, and camping gear, and food. They were planning to stay a while, as I recall. They had used their key to get into the trunk that morning, when they were loading everything, but when they reached their campsite at the river, the key wouldn't open the trunk."

"I remember. I tried getting that sucker open for nearly an hour. The key would turn, but no matter what I did, it wouldn't unlock it. Finally, I got one of the women inside, pushing on the trunk-release button in the glove-box, and the other out back, working the key in the lock, while I got up on the trunk and began to bounce. Every time I bounced up, I could hear things shifting around inside the trunk, until things finally moved enough to clear the lock, and it opened," Don said.

"I couldn't believe what all they had crammed in there. It's no wonder it wouldn't open. I just wonder how they got it closed in the first place."

"Probably had somebody sit on it," I suggested. "You know, the way I do when I'm packing my suitcase to go on a trip."

"A suitcase is a lot easier to open than a car trunk. You'd think they'd use a little good, common sense," Don smirked.

"Well, as you've often said, 'It's a shame, but it's gotten to where good sense isn't very common, any more.'"

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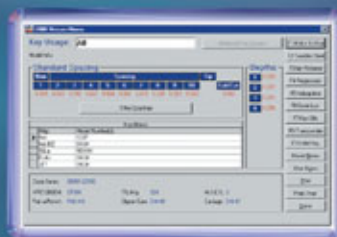
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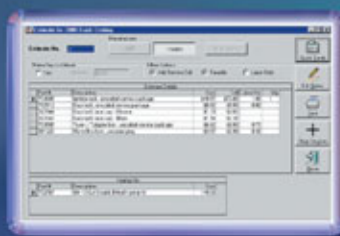
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THINK OUTSIDE



THE RING



by Dale W. Libby, CMS

Usualy I am full of myself and a know it all. I went to open an ISM money vault and proceeded to "forget it all." Yes, my foot was killing me, and yes, I was scheduled for foot surgery the next day. It was snowing and the surgical shoe I was wearing was wet and my foot as well, and the mental anguish...etc. etc. I just lost it. I guess you learn more from failure than from success, so I will pass on my re-acquired knowledge to you (and secondarily to myself as well).

My monumental disappointment happened at an upscale jewelry store about 60 miles from my shop in Elgin, Illinois. The money safe I had to work on was an ISM labeled with a "Corporate Safe" metal tag over the ISM label. This unit was equipped with an S&G 8500 series combination lock and a LaGard 2200 key lock below. The Sargent & Greenleaf lock was the type where you dial the combination and return the dial to zero (0) and push in. Then you turn the dial 10 numbers to the right and if you have dialed in the right combination, the dial will retract the bolt as you turn to stop.

The problem occurred when the customer received the safe and loaded it with a lot of expensive jewelry, watches, gold, silver, and closed the door and locked it. He never tried the combination he had with the door open. Needless to say, he (the store owner) was mad when he could not open the safe with the supplied combination.

For reasons best left unsaid, he proceeded to knock the dial and dial ring off the safe with a hammer and screwdriver. Luckily the dial spindle broke off about 1" from the face of the door, plenty of room to attach an emergency dial. He then proceeded to call around for an emergency opening and eventually he got my company. I went out there and assessed the situation.

He supplied me with the combination that did not work. I told him to call the person who sold him this safe for the correct combination. The combo he had made no mention of turning the dial to zero and

pushing the dial in. It was the wrong combination. Eventually he got the correct combination and he gave it to me to work my magic.

My first thought was to just attach an emergency dial and dial the unit open. I then realized that my emergency dial was on my workbench 60 miles away. I did not have the time or inclination to drive back and forth to get it. Maybe I should have. I had plenty of other tools that I could use to get the safe open. I could, and should have been able to do it, if I had been thinking outside the dial ring, and not inside it.

pushing the dial in. It was the wrong combination. Eventually he got the correct combination and he gave it to me to work my magic.

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**1. Emergency dial. Note see through slots milled between hub and numbers.**

In *photograph 1*, you see my favorite emergency dial. It has an Allen wrench attached to the side of the dial. To install, just push over the spindle and tighten the three Allen screws around the central hub of the dial ring. This emergency dial also features cutouts between the central hub and the outside numbers. These viewing ports let you attach the dial to a safe that has been drilled at the drop-in position to let you see the gates line up under the fence while dialing. A great double duty dial.

To use this dial as an emergency dial, just attach it to the spindle and make an opening index mark at 12 o'clock. Dial the existing known combination to this mark and the safe will open. You might have to dial a little off if this does not work the first time for proper wheel alignment. Just oscillate the dial near the drop-in and the safe will open.

There are other types of emergency dials that are attached by drilling a hole in the spindle and driving in a square pin and attaching

the dial mechanism to it. This emergency dial can be used on spindles that have broken off flush with the face of the door, but it is hard to install and drill the moving spindle end. I have done it, but it is work.

I attached the right tools, but with wrong thinking, so I failed. All I had to do was think outside as opposed to inside the dial ring. It was so simple, how could I have missed it? I don't know, but in the future, perhaps, this will not happen to you. It was easy to set up the dial for the push in at zero requirement of this lock. Aligning the pointer was easy, and the safe should have opened easy.

When attaching an emergency dial, or pointer to the dial spindle, there are a couple of ways I use to accurately position it relative to the dial.

1. I find the drop-in position. If the dial and drive cam are properly aligned, then I can get within a few numbers. Some drive cams have four positions for handing, and this would assume that the lock has been properly handed. However, this is not necessarily so.

2. I look for the spline key channel and assume that most dials have it located at #50. I attach my pointer accordingly.

You might have your own way to determine how to attach your emergency dial. Once attached, however, there are only 100 possible combinations to try at most. This is especially true on round door safes when the exact drop-in position is not known or cannot be determined. Using an emergency dial tool is inside the dial ring thinking, and for these emergency tools, this is the correct thinking.

For outside the dial ring thinking, let us first do an actual transferring of numbers using a dial ring, and see how this thinking came about and how to use it. The first concept to remember whenever transferring wheel gates from a transfer position to a drop-in position is that we are transferring a relative combination, not the actual combination of the safe or chest! Inside the dial ring is the actual combination. Outside the dial ring is the relative combination.

**Continued on page 86**



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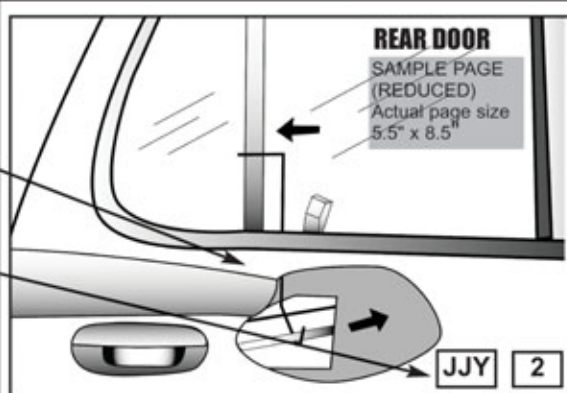
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**REAR DOOR**  
SAMPLE PAGE (REDUCED)  
Actual page size 5.5" x 8.5"

VEHICLE: BUICK RANIER, ISUZU ASENDER, 03 and up  
WEDGE: YES  
LIGHT: YES  
TOOL: TT-1001  
DIRECTION OF TURN: CLOCKWISE

This vehicle is equipped with horizontal linkage rods on all doors and can be unlocked easily through the REAR DOOR with the TT-1001 tool. Begin by wedging open a gap at the base of the main window of the REAR DOOR as far to the rear as possible. Insert the tool into the door as far to the rear as possible, with the hook pointed toward the front of the vehicle. Lower the tool until the tip is slightly below the level of the outside door handle. Rotate the tip of the tool to the inside of the door, and then pull up on the tool to grasp the linkage by feel. Twist the top of the tool to bind the linkage, then lever the linkage rod forward in order to unlock the vehicle.

**NOTE:** An anti-rattle tube made of webbed plastic surrounds the linkage rod. The tool will hook onto the linkage rod and the anti-rattle tube together. It is important to twist the top of the tool as you lever the linkage forward in order to prevent the tool from slipping.

**ALTERNATE METHOD:** See page US 197 for an alternate method for front door.

\*Direction of turn for driver's side only. Passenger's side door has no lock cylinder.

PAGE: USA 196

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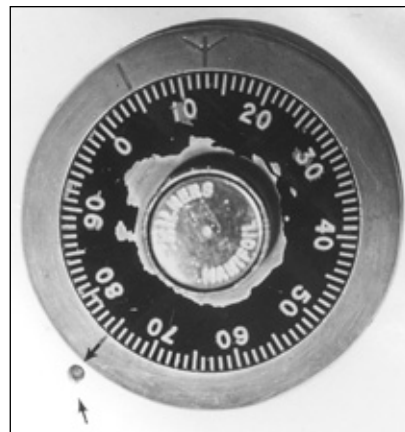
Continued from page 83



**2. Milner's Manifoil Dial and dial ring used hypothetically here.**

In *photograph 2*, we see a Milner's Manifoil dial and ring. The opening index is at zero and the changing index is above 92 in this picture. This is similar to the standard S&G, LaGard, Precision type combination lock and dial ring. We do not want to pull this unique and impossible to replace dial, so we will make a pencil mark at #63 on the dial ring. This will locate the hole we will drill. This is NOT the place to drill on a Milner's, we are just using this ring and number for a hypothetical lock and outside the ring drilling.

on the dial ring at number 20 on the dial. Remember, this is a relative combination number and not the real number of the combination.



**4. The second number of the relative combination is 75 at out new dialing mark.**

In *photograph 4*, we continue to turn the wheels and align the gates under our mark on the dial ring until all the wheel gates are aligned. I am using the mark I made for reference at #63. The relative combination at our mark is 20-75-40. We are now going to use a non-mathematical way of transferring our wheel gates to a different location in the combination lock to open the lock. (See *photograph 5*.)

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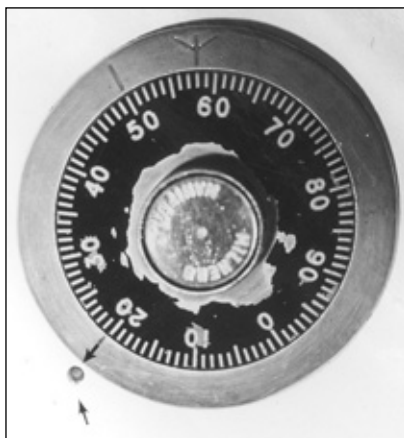
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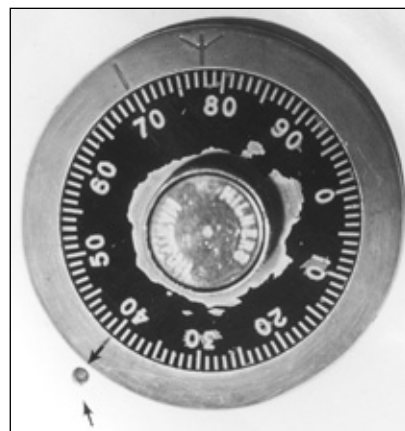
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**3. Dial ring marked at #63 for drilling outside dial ring penetration. First number of relative combination is #20 at the new dialing mark.**

In *photograph 3*, we see my mark at #63 on the dial ring and the number 20 dialed to this mark. The opening index is above #57 in this picture. The little dot with an arrow is supposed to represent the hole outside the dial ring into the case of the lock. When using a scope (in theory) we dial all the wheels around and find that the first wheel gate aligned exactly under the arrow



**5. Third number of relative combination is 40. All the gates in the three wheels are now lined up under our new mark.**

It is all summed up in *photograph 6*. I have set the dial to zero. We now can see that the hole and first mark I made is at #63 on the dial ring. This #63 position means nothing. I just choose it as a theoretic place to drill a hole in a theoretical lock, which was out of harm's way. I inserted my scope and read the position of the wheel gates at my mark at #63. I recorded the found numbers in the



**6. Make new mark at #82 (theoretical opening position for this theoretical lock) and dial the relative combination of 20-75-40 to this new mark. This moves all the gates of the wheels to this mark and oscillate the dial when going to the stop position.**

correct order of 4 times left to 20, three times right to 75, two times left to 40. Again, this is the theoretical combination. If the drop-in position for this lock was at 12 o'clock, the relative combination and the actual combination would be the same. Except for some zero change Diebold locks, this is usually not the case.

Again, in *photograph 6*, I have made a new mark at number 82, for in this theoretical lock I have determined that the drop-in position is at 82. I can just see the roller lever fence at about that position with my borescope. No adding, no subtracting, I just make a mark where I think the drop-in position is and dial the 20-75-40 combination to that new mark on the dial ring. I have now aligned the gates of the lock under my new mark. Turning and oscillating the dial, I see if the lock now opens. If it does not, I then make another mark, either above or below the mark at #82 and try the combination to this new mark. Soon this theoretical lock does open.

We opened this lock with a relative combination. The true combination would have to be determined by adding or subtracting a certain amount of numbers in reference to the dialing or opening index. One could also take apart the lock to find out what the actual combination was, and then reset it to a new combination. That is not the thrust of the article.



**7. Hard to see Dibb's magnetic dial ring and attachable pointer.**

In a rather poor *photograph 7*, we see the Dibb's dialer that I had to try to open the lock with. It has a large magnetic circle and an attachable pointer. This is a tool that I have had for 40 years. It is a mathematical transferring tool. Drill a hole in the door after pulling the dial. Attach the pointer to the spindle and read the wheels with the corresponding numbers. Transfer (without moving the outer ring) your numbers by adding or subtracting (add to move the gates left, subtract to move the gates right) and the lock will open.

Recently, when using this tool I made an inner circle mark, with lines at 25, 50, 75, and zero. This way, by using any number of the combination, I can rotate the outer ring to a new relative position and dial my first combination to this point. This will move the gates accordingly and by using the marks, I can make sure the ring is centered and aligned.

I tried using the Dibb's tool as an emergency dial and it did not work. This tool is an outside the ring tool. I was using the actual combination and this is where I failed. There is a secret that I did know, but did not remember when I used this tool. The other problem with using this tool on the ISM money chest was that the face of the chest was stainless steel, and as we all know, this steel will not support a magnet. I had taped this tool to the door with results of it falling off and becoming misaligned.

If you want to use this tool or something similar, then you must subtract your known combination numbers from 100 to get your outside the dial numbers that this tool uses. Actual numbers will help

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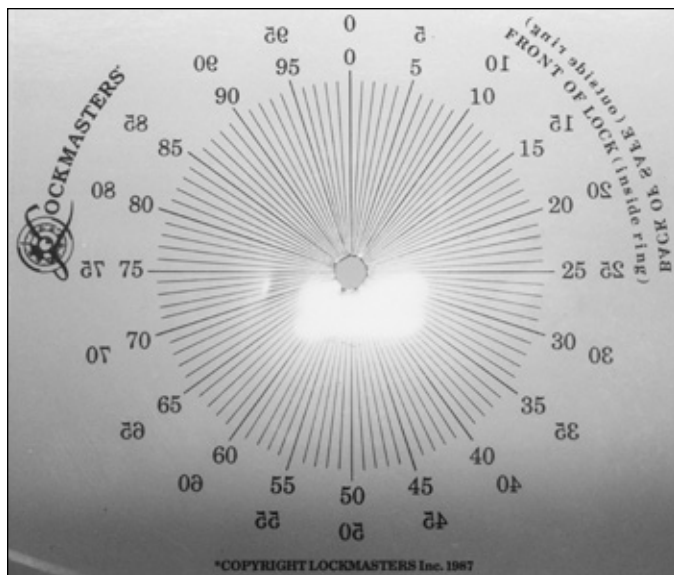


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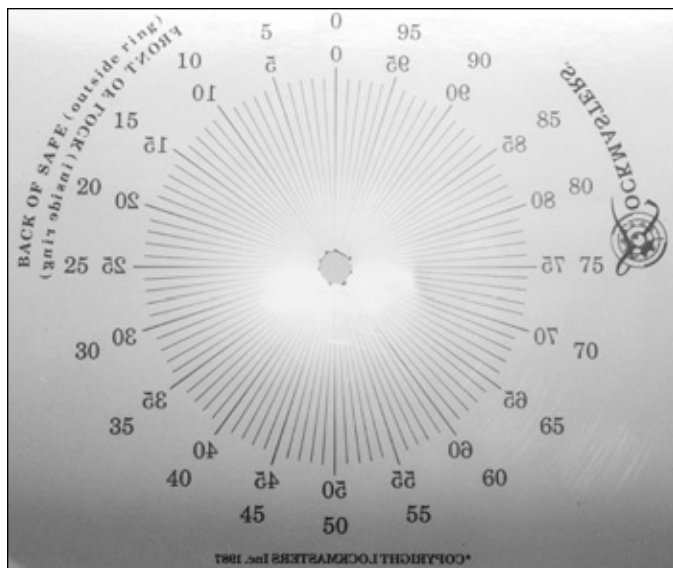
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**8. Lockmasters plastic template with front of lock (inside of ring) readable, normal configuration and direction of numbers we are used to reading.**



**9. Template reversed with BACK OF SAFE (Outside of Ring) showing. This reversed dial ring can be used as an emergency dial template without converting the combination numbers.**

if you are called on to open a safe with a missing dial. The combination for this safe is 90-60-30, and right to stop. After attaching the Dibb's or similar pointer, you would change the combination to an outside the dial combination. The number 90 minus 100 would become 10. The 60 would become 40, and the 30 would become 70. You would dial 10, 40, 70 and right to stop.

Here is the thinking. You are changing the inside the dial ring combination, to an outside the dial ring combination. Picture in your mind the attached dial ring for inside reading. If you start at zero and turn the dial 10 numbers right, then number 90 is under the opening index. If you use the Dibb's pointer and turn the pointer 10 numbers right, then you show a number 10 on the index ring. You have turned the spindle 10 numbers to the right, inside it is a 90, and outside reading it is a 10. If I had converted the real combination (inside reading) to outside reading, the unit would have opened.

Easier to understand possibly, is the use of the Lockmasters plastic

combination template used for locating exact drill points on safe locks. *Photograph 8*, shows the plastic see through template placed in the normal numbering position. Between #10 and #25 we see the words and can read them "Front of Lock (inside ring)." This is the normal configuration. You would use this if you had to drill at #41 by

7/8-inches (Star round doors, no hinges). You would align the zero (0) mark with the opening index and mark #41 on the index or the door so when you removed this plastic plate you would have the precise place to drill.

However, this template makes a great emergency dial template too. In *photograph 9*, I have reversed the template and the numbering is opposite normal. Also, easily readable now in the upper left quadrant between the numbers #25 and #10 is the phrase "Back Of Safe (outside ring)". By using the template this way, you would attach your pointer and dial the original unchanged combination 90-60-30 and the safe would open, assuming that the pointer is attached to the zero position on the dial spindle.

So, in summary, when attaching an emergency dial, use the original combination with inside the dial ring dialing. When attaching a pointer to the spindle, use outside the dial ring procedures or use a reverse dial ring.

Do attach your emergency dial rings or pointers, dial, transfer; hopefully open the lock and prosper. **TNL**

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# Road Rally

A showcase of locksmith service vehicles.

If you think your vehicle has what it takes to be featured here, send photographs and descriptions to:  
The National Locksmith, Road Rally, 1533 Burgundy Parkway, Streamwood, Illinois 60107-1861.



**Owner:** Doug Bibee,  
Reidsville, NC

**Model:** 1997  
Ford E-150 Van



**Owner:** Augusta C. Bellows,  
Baldwinsville, NY

**Model:** 1994  
Dodge Van



# COLLECTIONS

BY TED TATE

A lot of the average locksmiths business is paid at the time of service rendered, however, there will be times when you will be asked to extend credit. For instance, large corporate accounts, landlords of buildings, government accounts and a whole series of other situations.

If you don't already take credit cards, it's a mistake. For the few bucks they charge you, it's much cheaper than chasing people for money.

What about the situations where it's either send them an invoice or don't do business? Here are some ideas for controlling debt people may owe you.

Be clear in your own mind and make sure any employees understand who does, and who does not, get credit. Just because it's a business entity or someone you've done with before on a cash basis, does not mean they are credit worthy.

Usually individuals and small business people who want credit should be offered the credit card option, small accounts can be difficult to collect. In some cases where the client just won't pay, you may wind up writing the bill off because the cost to go after it is too small.

When you do decide to invoice someone, explain up front your credit terms and make sure customers understand them at the time of the sale. Ask if they will abide by them. Some large corporations and all government agencies have their own policies. In these cases be sure you understand how payments are made and that you can afford to wait.

## WHEN PEOPLE DON'T PAY THEIR BILLS

Some business people feel uncomfortable calling past due accounts, they feel it makes them look "small" in the customer's eyes. It doesn't. Or that people will pay eventually (some will never pay you). Some feel that calling people for payment looks like your business is needy. Credit Card



companies call me when I'm past due, does that mean they are needy or just expect me to honor my commitments?

When accounts become late with payments, procrastinating can make things worse. Every day an account goes past due, reduces your chances of ever collecting your money. Here are some strategies when collecting past due debts.

Don't waste time on past due notices or collection letters, they are too easy to ignore. Telephone the person who signs the checks.

Don't apologize for calling, don't say you hate to bother them, don't tell people you really need the money (which you well may) and don't joke around. It comes across as weakness, giving some people the impression you can be stalled further. Certainly be friendly, but this is a serious matter, be business like.

Be prepared to e-mail or fax a duplicate invoice immediately if they claim they can't locate the invoice. That's a common stall tactic.

When you call, if you don't know who signs the checks, ask for that person. Here's how to ask a receptionist for the person you want: "Good afternoon, this is Mark Goodman from Mark's Locksmiths. We have an outstanding invoice your company owes and I need to speak to the person that has the authority to issue us a company check. Tell me, who would that be at your company?" Before they connect you, ask the receptionist to give you the persons full name, job title and extension number, and make a permanent record of it in your account files in case you have to call back.

When you get the right person on the phone, here's a little script that's worked for me countless times:

"Good afternoon Mr. Jones. this is Mark Goodman from Mark's Locksmiths. The reason I'm calling is we have an outstanding invoice with you dated 00/00/00, number 12345, in the amount of \$000.00 and it is past due. Could you please tell me when we can expect a check for that amount?"

Vague terms such as, "You'll be getting a check soon," "I'll look into it," "It's scheduled to go out," "It's in the system," mean nothing, they are simply stalls to blow you off the telephone. Tell them you'll wait on the phone instead of having them call you back. Also ask them if they are the person responsible for issuing company checks. Sometimes you'll be speaking to a clerk instead. You've got to speak to the right person if you want to be paid.

Sometimes they will tell you they have to check with another person and call you back. Respond with, "If you don't mind, I'll just hold on the phone, I really need to clear this up today."

Why do this? Because some people won't call you back and

they will hide behind voice mail if you call back.

Ask for a specific date when the check will be in your hands. If a check fails to arrive on that day, then call them back, remind them of their commitment and ask again, when specifically you can expect a check.

Be persistent. The saying, "The wheel that squeaks the loudest gets the grease" is very true in collections. Don't be surprised if some accounts require more than one call.

If you have an account that after several calls has not paid, as a last resort offer to take progress payments, perhaps half now and half in ten to thirty days.

When calling past due accounts, the following behaviors are bad signs: Debtors lie or misrepresent the facts, make promises to pay but don't, offer creative but implausible stories, claim the check was mailed, are vague and won't commit to a firm payment date. The person responsible for paying may also avoid your calls or become rude and defensive.

It's best to cut off further credit until delinquent accounts become current. Offer to do business on a COD basis or on a credit card (if you take them). Allowing someone who can't pay a bill more credit can only make things worse.

If you need collection help, use an attorney who specializes in collecting bad debts. Collection agencies can't really sue anyone, just threaten and debtors know it. However, they know an attorney can and sometimes that's enough to collect the debt.

Ask business friends for the names of any attorneys they've used who specialize in collecting debts on a contingency basis (usually 30% to 50% of money actually collected). Turn accounts you can't collect over to a collection attorney.

---

*Ted Tate is a nationally known author and trainer. His seminar on "Power Sales Closing" is one of several he gives at in-house sales meetings and conventions nationwide. Sales success tips are at his website: [www.trainingexpert.com](http://www.trainingexpert.com) **TNL***

**Dave McOmie's**

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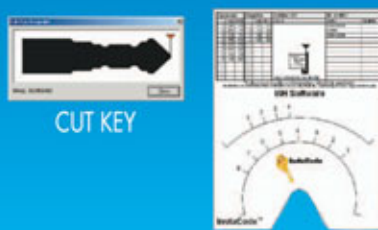
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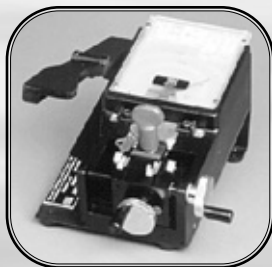
# TECHNITTIPS

## YEAR-END PRIZES



### **Grand Prize**

*Silca Bravo Duplicator*



### **1st Prize**

*HPC's 1200PCH  
Punch Machine*



### **2nd Prize**

*Mas Hamilton's  
PowerLever 2000*



### **3rd Prize**

*Curtis 2200 Duplicator*



### **4th Prize**

*SDC Magnetic Lock,  
Keypad and Exit Switch*



### **5th Prize**

*Securitron 12-Volt Unlatch Plug in  
Trans & Touchpad Retail Value \$650*



### **6th Prize**

*LaGard "SmartGard"*



### **7th Prize**

*Detex Advantex*



### **8th Prize**

*Arrow 400 Series Alarmed  
Exit Device & S-75 Mounting  
Plate Kit for Narrow Stile  
Aluminum Doors*



### **9th Prize**

*\$500 in ASP Auto Locks*



### **10th Prize**

*\$500 in Strattec Auto Products*



### **11th Prize**

*Tech-Train "Jiffy Jack"*



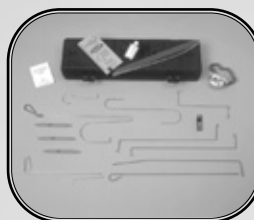
### **12th Prize**

*Sargent & Greenleaf 6120  
Electronic Safe Lock*



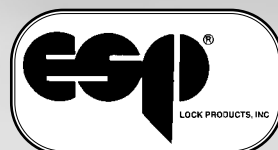
### **13th Prize**

*High Tech Tools  
2000 Pro Set*



### **14th Prize**

*Slide Lock's Master "Z" Tool Set*



### **15th Prize**

*ESP Products Sampler*





**16th Prize**

Major Manufacturing's  
HIT-111 Drill Guide



**17th Prize**

Abus Padlock's Marine  
Padlock Display (\$120 Retail)



**18th Prize**

MBA USA, Inc.  
Falle Pick Set



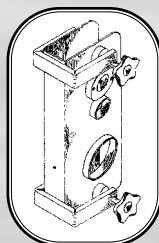
**19th Prize**

Baxter JV-1 & JV-5  
Code Books



**20th Prize**

Sieveking Products  
Squeeze Play



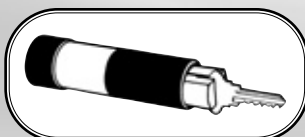
**21st Prize**

A-1 Security  
Manufacturing  
Installation Jig



**22nd Prize**

Keedex Sampler



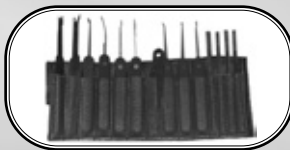
**23rd Prize**

Framon  
Impressioning  
Handle



**24th Prize**

Gator Tool Multi-Purpose  
Facecap Tool



**25th Prize**

Peterson Picks,  
by Peterson Manufacturing

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**Greenleaf**  
**4400 Series Safe**  
**Deposit Box**  
**Lock**

• **A-1 Security**  
**Products**

• **ILCO Key**  
**Blanks (100**  
**Blanks)**

• **Keedex "SPIN**  
**OUT"**  
**Screwdriver**

• **Tech Train**  
**Training Video**

• **Sieveking**  
**Products**  
**Gm E-Z Wheel**  
**Puller**

• **Major**  
**Manufacturing**  
**Products**

• **The Sieveking**  
**Auto Key Guide**

• **Jet Key Blanks**  
**(100 Blanks)**

• **High Tech**  
**Tools**

• **LaGard Combo**  
**Guard**

### Send in your tips, and win!

#### How To Enter

Send a tip on how to do any aspect of locksmithing. Certainly, you have a favorite way of doing something that you would like to share with other locksmiths. Write your tip down and send it to:

Jake Jakubowski, *Technitips Editor*,  
**The National Locksmith**  
1533 Burgundy Parkway  
Streamwood, IL 60107-1861

Or send your tips via  
E-mail to: [Natllock@aol.com](mailto:Natllock@aol.com)

#### Rules & Regulations

Each tip submitted must include your full name, street address (no P.O. Box numbers), city, state, zip code, phone number, fax number and e-mail address. **When sending tips via e-mail make sure to include complete address and phone.**

#### Every Tip Published Wins

If your tip is published you will win one of the monthly prizes listed. At the end of the year, we choose winners from all the monthly tips published, that will be awarded one of the fabulous year end prizes. All you have to do to win is enter.

Prizes are arranged according to suggested retail price value.

**Tips Start  
on Next Page**



# JET KEY BLANKS WINNER: Tricky Decoding Trick

The other day I had to decode two keys: a Toyota TR47 and a Chrysler 8-cut. Trouble was, I did not have a gauge to decode them with.

To decode the Toyota TR47, I discovered that I could use the GM 10-cut without problems, as the depths and spaces are the same.

To decode the Chrysler 8-cut I used the old Ford double-sided codes and just ignored the #5 depth.

Using the codes worked like a charm and solved an immediate problem for me. Hope it helps someone else.

Robert Lazich  
Wisconsin



# WEDGECO KEY EXTRATOR WINNER: Cracking a Supra

I had previously sold and installed a SUPRA lock box which I surface mounted to a wooden door. Soon there after the customer forgot the combination and called me.

After carefully prying the old box off the door, I installed a new one and decided to take the old one back to the shop and see if there was a way to open it without drilling or destroying the lock. It didn't take me long to realize that I needed a very small scope to see into the box through the mounting holes, which I didn't have.

I took the SUPRA over to a friend's shop where we used a small scope to try and read the combo through the mounting holes (This particular model had six factory drilled mounting holes in it). The first thing we discovered was that the plastic cover over the combo chamber prevented us from seeing the backside of the buttons. With a small ice pick we were able to move the cover far enough to the side to see the back of the combo buttons.

Knowing that the lock would open with the entry of the proper combination, I proceeded to read the combo through the mounting holes. Keep in mind that the lock will only respond to the proper combination, but that the combination can be entered in any sequence.

# A Few Words From Jake...

Okay, here I come—back with an on-going reminder. But, first I want you to get your January, 2003 issue of *The National Locksmith* and go to the Technitips column and look at all the Year-end prize winners. We gave away *thousands and thousands* of dollars worth of prizes in the year-end prize drawing. Plus, if you look at the monthly prize list you will see that we also give away *thousands and thousands* of dollars worth of prizes each month as well.

That means each locksmith that has a tip printed during the year not only gets a prize for the month the tip is printed, but that locksmith also has an opportunity to win one of the great prizes at the end of the year.

There are no raffle tickets to buy, no chances to be bought, no gimmicks or gotchas. Just sit down, write up your favorite idea, trick or tip on how to make your day or a specific job go easier, and send it in to me. If you can draw a little illustration to go with the tip, that's welcome. It doesn't have to be "good" just enough to give me an idea of what your trying to get across and the folks at TNL can make the drawing what it should be. We've got a great graphics department.

So, go back to the January issue, look over the year-end prizes and think about whether or not you'd like to see the big Brown truck pull up in front of your house with one of those dandy products.

Okay, now another subject. Last year I was invited to hold six Tips, Tricks and Stuff seminars around the country. This year looks as if it might be the same. So, if you missed one of last year's seminars, please try to make one this year. The feedback has been good and everyone has had a good time.

Speaking of seminars, I want to thank each of the associations that invite us to their events, and I want to thank each of the "contributors" of door prizes, grab-bag goodies and everything else that's donated to help make these seminars a success. I'd also like to thank folks like Tom Lynch, Randy Mize and various manufacturer's and distributors that participate in those seminars from time to time.

I'll keep y'all posted on the next one.

See y'all next month.



by Jake  
Jakubowski

Using a second unit for comparison, it took me almost an hour to open the lock by "reading" the combination through the holes. During my attempt to open this box, I discovered that a Mag (Silhouette), with the lens removed, exposing the bare bulb, gave me all the light I needed to see into the interior of the lock.

To determine the combination, the arrows pointing up in the box are OFF or inactive. The arrows pointing down in the box are the actual combination. Remember that after each try of a combination, you have to clear the lock with the slide on the front of the box.

The chart shows the number of possible combinations that are available on one of these locks. (See illustration A.) The left-hand column of figures are the number of combinations, and the bottom row of figures are the number of buttons. Where the lines intersect is the

number of combinations available. As you can see, the optimum number of buttons to utilize in a combination is five. Five buttons will

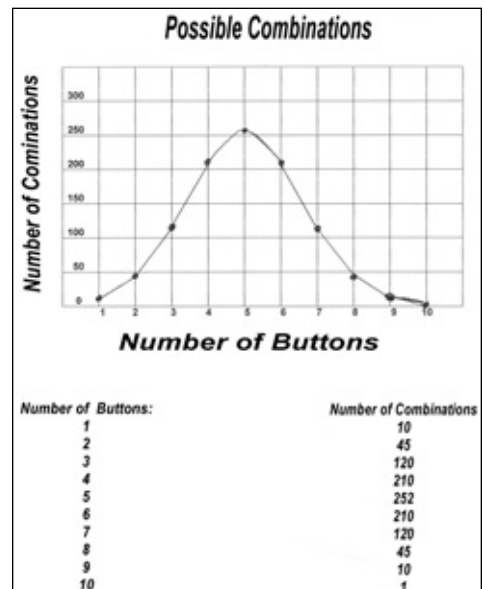


Illustration A.



yield 252 different combinations. That almost insures that someone is not going to stand there and run random combinations in the hopes of getting the box open.

I offer this tip as an alternative to drilling the box open (which is the fastest way) and suggest it might be fun to sit down and play with a few of the old SUPRA's you might have around the shop.

Since the sequential entry of numbers is not an issue, it should be relatively easy to develop a progression chart listing all of the possible combinations.

*Tim S. Hopkins  
Nebraska*

**Editor's Note:** If you're trying to figure out how Tim arrived at his numbers, you have to keep in mind the fact that the buttons on these units DO NOT have to be pushed sequentially. Therefore, when trying to determine the number of possible combinations, you do not figure permutations like you would on a 3-wheel, 100-number safe lock ( $100 \times 100 \times 100 = 1,000,000$ ). You have to figure the formula using "factorials" ("N" is the number of buttons and "K" is the number of buttons used in the combination). I checked the numbers as shown on the chart and they are accurate as far as I can determine.



**STRATTEC WINNER:  
Volvo Glove Box  
Lock**

Some Volvos, from the 1980's, have a particular style of glove box lock that has a propensity to fail unexpectedly. When they do, this tip is an easy way to remove the lock for replacement.

These particular locks are easily identified by the turn knob that surrounds the keyway. The knob has a rubber grip, which is fairly simple to remove, but the removal isn't absolutely necessary. When these locks fail, it is usually because the rear of the cylinder is no longer actuating the mechanism that retracts the small latch-bolt that keeps the box closed.

The glove box door on these Volvos has a plastic exterior shell in which the lock is housed. If you take a large pair of Vice-Grips or Channel-Lock pliers and clamp down on the turn knob, you can force the entire lock to turn from 45 to 90 degrees, and simply pull the glove box open.

The lock is mounted in a "D" shaped hole, much like a cam lock, and by turning the lock you are causing the plastic housing on the door to flex. If you are careful and try not to "muscle" the lock too much, no damage will result from turning the lock and the "D" cutout will remain usable for the new lock.

We've done it on at least 10 cars over the last few years. The lock will have to be replaced, of course, but you should be able to get another from your local Volvo dealer.

*Larry Bors  
Oklahoma*



**HPC WINNER:  
New Twist on an  
Old Trick**

I'm sure most of you are familiar with the idea of using a plastic sleeve to protect vehicle surfaces from getting scratched when inserting an opening tool.

Like many locksmiths, I make my own out of 2-litre bottles. One bottle will usually yield two sleeves. The sleeves are open on one end which makes them handy for two reasons: One, it allows free movement of the string that I have attached to the end of my In-Cab reach tool. Two: It



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**Photograph 1a.**



**Photograph 1b.**



**Photograph 1c.**

allows me to easily push my button grabber tool through the door with much less wear and tear on the tool. The string allows me to shake the sleeve off the tool once the tool is inside the door and helps me guide the tool to the area I want it to go.

Here's the new part of this old trick. For the longest time, I could not figure out how to get a locked storm door, with no key in the handle, open. Many times customers would say: "The back door is unlocked, or only has one lock on it, but the storm door is locked!"

I use the plastic sleeve to help unlock these doors. As you can see in *photograph 1a*, *1b*, & *1c*. I start the process by inserting the sleeve at the bottom of the door, between the jamb and the door and work the sleeve upwards until it contacts the mechanism, manipulate the sleeve around the latch—depress the latch and pull the door open.

*Larry Bors  
Oklahoma*



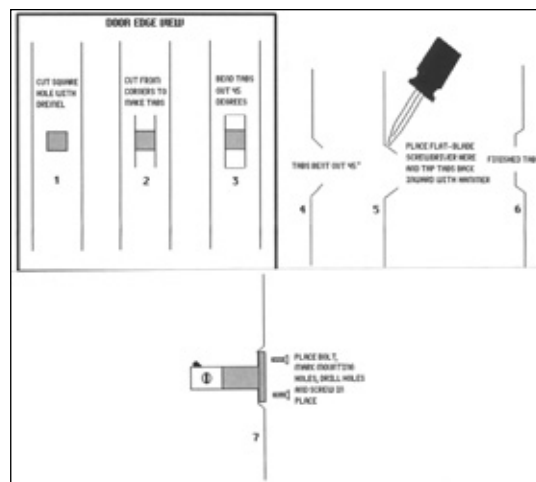
**SARGENT AND  
GREENLEAF  
WINNER:  
Door Edge Prep**

I'm sure a lot of locksmiths out there know this trick, but I thought that a newcomer might benefit from this information. Here's the way I found to quickly and easily mortise a metal door edge to flush-mount a deadbolt.

The finished product may not win any awards for "pretty" but I have used this to get a prep on doors in boiler rooms, sprinkler rooms and other areas where it doesn't have to be pleasing to the eye.

I begin by laying the deadbolt against the door edge and scribing its outline with a scratch awl. In the dead center of the rectangle, I lay out a 1" inch square and cut the square out with a Dremel Tool®. (See *illustration B*.)

Next, as shown in the illustration, I use the Dremel Tool® to cut lines from the corners of the square. I find I need to cut about  $\frac{3}{16}$ " past the scribed outline of the deadbolt face on both the top and the bottom to allow the deadbolt to fit properly. These cuts form the tabs that the bolt mechanism is going to mount to.



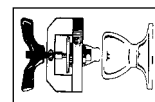
**Illustration B.**

I use a small pair of Vise-Grips® to grab the tabs where the dotted line is shown in the illustration, and then bend them out about 45°. Next, I place a flat-bladed screwdriver right on the outline mark and drive the tabs back into the door until the tabs are vertical, as shown.

With the tabs recessed all that remains is for me to place the bolt into the hole, mark the mounting screw holes, drill and tap the holes and finish installing the deadbolt.

*Jack Booth  
Maryland*

Editor's Note: Jack, thanks for the tip. I've seen some similar ways of doing this, but I like yours. Also, thanks for the neat drawings. Makes it much easier to follow. I would suggest though that you take a look at Bob Sieveking's SqueezePlay®. That tool makes fast, accurate, and extremely neat mortises in the edges of hollow metal doors. I wouldn't trade mine for anything.



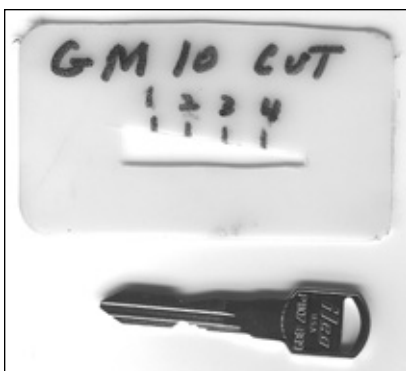
**A-1 SECURITY  
PRODUCTS  
WINNER:  
Making A Key  
Decoder**

Several times on the forums I've seen locksmiths requesting information on key gauges (key decoders). For several years now, I have been making my own. The one that I have included with this tip is for a GM 10-cut, but they can be made for almost any type key.

I use a piece of plastic (white) about the size of a credit card. (See *photograph 2*).

I make a tapered cutout in the middle of the card and make sure the bottom of the cut is straight. The cutout is approximately 1- $\frac{3}{4}$ " long





**Photograph 2.**

and approximately 3" wide, tapering it a width of  $\frac{1}{8}$ ".

Using clippers, depth keys, or a code machine, I make the proper depth cuts on an uncut blank. In the case of a double-sided key, I make the cuts on both sides of the key.

To mark the decoder, I put the key in the wide end of the slot and slide the #1 depth (or zero, as the case may be) down to where the key bottoms out on the flat portion of the gauge and the "cut" in the key is snug against the sloped portion of the gauge. Then, I mark that position with an indelible marker.

I continue with each depth until I have all the depths recorded on the new decoder. I find these decoders handy for measuring worn keys, and working with keys with seven to ten depths where sight-reading would be difficult.

*Clarence "Sonny" White  
Illinois*

**Editor's Note:** Sonny, I did a few quickie measurements of the key you sent. Dead on, my friend. My only caution to any of my readers is to be sure that the code cut key is perpendicular in the gauge before you mark it. If you work over the edge of a table or bench, you can use a small square to make sure your keeping everything in line.



**ILCO KEYBLANKS  
WINNER:  
"What Rhoda  
Wants..."**

The first sign of spring at my shop was the keys on my keyboards rattling as a large group of Harley Motorcycles pulled up in front of my shop. The door opened and my shop filled with the smell of leather.

They were here for spare keys.

Most of the bikes used tubular keys and I began cutting them. I was using 137B blanks when the leader of the pack's girlfriend Rhoda (Her name

was Rhoda Harley...can you believe it?) said: "I want that key!" She was pointing to an original ACE steel key that was hanging on my board.

I explained to Rhoda that I preferred using the 137B's because they didn't cause the pin wear that the steel keys did and, therefore, wouldn't give her as much trouble as the originals might.

The leader said: "What Rhoda wants, Rhoda gets!" Okay! I gave Rhoda what she wanted. They paid me and went outside.

The keyboards started shaking again as the powerful motors were revved up and the pack prepared to leave. Then, suddenly, total and complete silence.

The Leader of the pack came through the door and said to me, "My key is stuck in the fork lock and won't come out!" What I found was the steel key that I had cut for Rhoda was, indeed, stuck in the lock. Talk about a Maalox Moment!

Spraying the key and lock with Houdini, and using my Framon tool on the head of the key, I turned the key and it came out of the lock with hardly any effort.

I cut Rhoda a new key on a brass 137B. It worked smoothly. I put a purple ACE cap on Rhoda's key and she seemed happy.

I went back into my shop to wait for the next sign of spring...boat owners needing keys.

*Lamar McCrider  
South Carolina*

**Editor's Note:** Although Lamar's tip is really not a tip, I thought I'd print it anyway since it does have a message (which is a tip, after all!). The point of the exercise is that you never know what to expect when a customer walks in, or when you walk into a customer's home or business. And, the only thing to do is keep cool and make sure you don't let your insurance lapse!



**KEEDEKX WINNER:  
Fast Kwikset Removal**

Recently, I had to rekey a 200-unit senior apartment house complex. The doors were all equipped with Kwikset interconnected lever locks. The deadbolts are held in place with a  $\frac{1}{4}$ " bolt, with a flat-blade screwdriver slot in the head, with a hole in the center of the bolt that is threaded 8-32.



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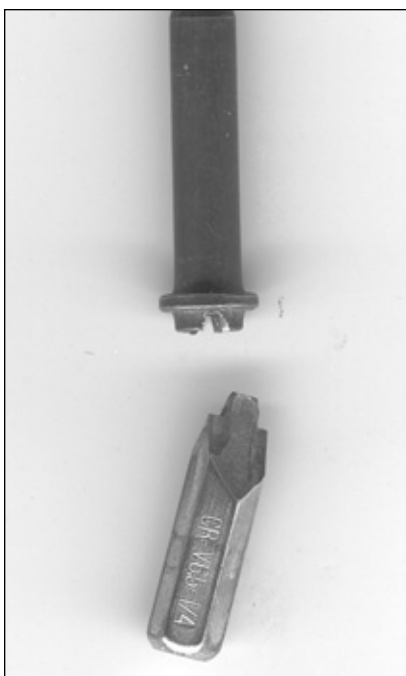
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**Photograph 3.**

I found a regular flat-bladed screwdriver was prone to slip out of the slot. Each time that happened, it slowed the job down. Looking for a way to move more quickly and efficiently, I used a flat-bladed driver bit that I ground down on each side of the tip as shown. (See photograph 3.)

That modification allowed the driver to "seat" firmly in the head of the cap screw and I could use my cordless drill as a driver to remove the retaining screws very, very quickly. And, of course...put them back on just as quickly.

*Everett Good  
California*



**TECH TRAIN  
TRAINING VIDEO  
WINNER:  
An Uplifting Trick**

When you work by yourself, you often have need of a third hand. This is especially true when you are working on doors and replacing hinges or installing pivot hinges, or whatever.

When I have to "lift" a door to align the hinges, or I am installing a pivot hinge, I lay my HPC Air Wedge on the threshold of the door, place the door on top of the wedge and then inflate the wedge to bring the door to the height that I want it to be.

I pump the Air Wedge with my foot until the door is raised high enough and I can insert hinge pins or attach a Markar Full Surface Pivot Hinge or perform other service work on the door.

*Joseph Sicari  
New York*



**SIEVEKING  
PRODUCTS GM E-Z  
WHEEL PULLER  
WINNER:  
Faucet Washer  
Trick**

I had just finished installing new lever-handled locks on a 96-unit apartment complex. The locks being replaced were a combination of old Schlage A series and some even older G series.

Since there was no rekeying involved, I decided to use the old cylinders in the new locks. They were all 5-pin cylinders and I planned to machine spacers out of 1/2" aluminum bar stock, bore the bar to 1/4" and then cut the bar in sections every 3/16".

After I had made a few, I suddenly realized that all I was doing was making aluminum faucet washers!

After a quick trip to my friendly plumbing supply company, I had enough spacers to do the job—and they were a perfect fit. Also, the Neoprene washers hold on to the tailpiece much better than the aluminum. Total cost? Five bucks!

*Steve Shields, CPL  
California*

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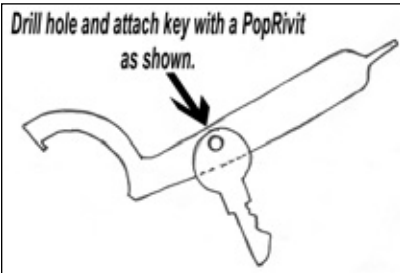
NOTE: NLAA members will already have received these materials.



**Key/Poke Tool/Wrench Combo**

Working in a large hotel presents few opportunities to use ingenuity to make repetitive jobs a little easier.

In our facility we have numerous offices that have been secured with a Simplex 1000, or a Simplex L1000. Of course, the combinations on these locks have to be changed regularly and often, the key for the combination sleeve lock is missing or misplaced.



**Illustration C.**

To solve the problem, and to facilitate service to these locks, I carry an installation wrench to which I have attached (riveted) the change key, as can be seen in *illustration C*. I carry this handy little tool in my pocket at all times.

I know it's not really a big deal, but it is surprising how much time I save not having to search for that key!

*Mark Tichenor  
Florida*

**LAGARD WINNER:  
Cat's Eye Light Tip**

Going on night calls, I find that "scene" lighting is hard to come by. I also find that the light from headlights is not effective, since I can rarely focus them on my work area and flashlights tend to get dropped and broken. And, with flashlights, the batteries tend to go out just when you need them the most.

One day while browsing through a bicycle shop, I found a set of "Cat's Eye" type headlights for use on bicycles.

These lights are available as either single or double sets and have a rechargeable Ni-Cad battery pack, shaped like a water bottle. They are designed to slip into the water bottle holder on a bike.

Although the initial cost (\$75.00) is a bit high, you can save a lot of bucks on replacement battery costs.

Anyway, I bought a double set and then went to the local hardware store

and purchased several different types of plastic squeeze clamps, which I drilled in various places to allow me to mount the light to it at any position I felt like.

I replaced the lamp mounting screws for the handlebar clamp with a similar screw with a knurled head so I can change the position on my squeeze clamp quickly and without tools. I also beveled the clamp's tips so that if I have to use it on a car door/window post; the bevel will pull the clamp inward towards the glass.

Then I found an old flexible microphone mounting tube similar to Greenfield electric cable. I mounted the second light to the one end of the flexible tube and attached a plate magnet to the other end.

Now I can position one light with the clamp for general lighting and use the magnet and flexible tube mount on the car roof to shine the light directly down on my work area.

The battery pack is made of Polypropylene and will not scratch the car's surface.

I can also use the light "inside" a house when I need extra light for a residential installation.

*Curt Fauerbach  
Pennsylvania*



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# BUSINESS BRIEFS

## **Steve Young and Tech-Train Join Lockmasters**

Lockmasters, Inc. is proud to announce the addition of Steve Young and Tech-Train to the organization. According to Lockmasters president, Mark Miller, the addition of Steve and the industry expertise he represents, is a perfect complement to their long history of product and training experience. Steve is regarded as an industry expert and widely respected by everyone who has had the privilege of working with or being trained by him.

Miller added, this great opportunity will afford Steve additional time to develop new auto opening tools, manuals, video's and even a new line of DVD products. Young will continue to be available for tech-support on his hot line. He will also be sharing his wealth of knowledge as part of Lockmasters popular training series; PUREAuto® Automotive Weekends, which will resume in Atlanta, March 2003.

Young's highly respected Auto Opening Manuals and full line of auto opening tools and other products will now be available through Lockmasters.

## **KABA Creates Access Control Division; Names VP**

The KABA Group has reorganized its North American sales, marketing and customer service under the new umbrella, KABA Access Control. Leading the organization is Michael Kincaid, who has been named vice president and general manager of KABA Access Control.

KABA Access Control serves the United States and Canada for all of KABA's access control products, including Peaks and Gemini patented cylinders, Simplex mechanical pushbutton locks, Solitaire battery powered electronic locks, PowerLever self powered electronic locks and Millenium on-line access control systems.

According to KABA, the new group, which is headquartered in Winston-Salem, NC, will provide enhanced service support for customers and distributors by giving them "one stop" shopping for their access control needs. The company says customers will be able to place orders for all systems from one location and receive one invoice.

## **Kryptonite Adds Business Managers**

Karie Johnson has been named Mobile Security Strategic Business Manager and Tom Fowler has been named Action Sports Strategic Business Manager for Kryptonite.

In addition, Roger Cross has been promoted to the newly created position of Manager of Cross Selling, where he focuses on creating opportunities for Kryptonite within existing Ingersoll-Rand businesses such as Club Car, Bobcat and Thermo King. He is now based in Connecticut.

Johnson will be responsible for all mobile security initiatives, which include the hardware and laptop security channels.

Fowler will be responsible for the bicycle, power sports, snow sports and any additional action sports initiatives from Kryptonite.

Reporting to Johnson are Courtney Celi, product manager; and new hires Kristin Smith, product manager; Danette Goen, commercial category manager, and Shawn MacLaren, residential category manager. Celi works from corporate headquarters in Canton, MA; the rest of the team is based in Carmel, IN.

Reporting to Fowler are Kryptonite veterans Don Warren, category manager, action sports; Eric Lightbody, account manager/international sales; and Gustavo Marqueviech, international account manager.

Smith joins Kryptonite from its parent company, Ingersoll-Rand (IR) And will be responsible for developing strategic products, programs and promotions for the padlock and flex security lines.

Goen, a fifteen-year veteran of Delta Faucet, will be responsible for developing products, promotions and programs to grow the category within commercial wholesale and locksmith customers.

MacLaren joins Kryptonite from IR's Productivity Solutions Division where he was the retail channel manager. His responsibilities at Kryptonite are to develop products, programs and promotions for the padlock and flexible security lines.

## **SAFLOK's MT™ Lock Achieves Prestigious Certification**

Saflok's MT™ lock has achieved compliance with the American National Standard Institute (ANSI) Builders Hardware Manufacturers Association (BHMA) A156.25-2002

American National Standard for Electrified Locking Devices. The MT™ is the only electronic lock to date to have been certified by an approved third party lab to be in compliance with the industry standard for electronic locking devices.

SAFLOK's MT™ lock has the ability to work with existing access management systems that use magnetic stripe, smart card or memory card technology. The lock uses non-volatile FLASH memory, which enables recording of up to 5900 entries as well as addition of new features while the lock is housed in the door. The MT™ lock is available with optional automatic deadbolt (ADB™) and mechanical key override.

*Contact: Kali Steck, Marketing Communications Specialist, SAFLOK, 248-680-8484, [kalisteck@saflok.com](mailto:kalisteck@saflok.com)*

## **Kosakowski Elected President of BHMA**

Paul T. Kosakowski, AHC, President and CEO of DORMA Group North America has been elected to a two-year term as president of the Builders Hardware Manufacturers Association (BHMA).

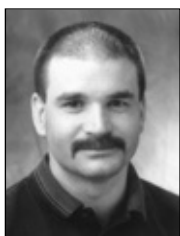
The BHMA is the trade association for North American manufacturers of commercial builders hardware. The 77-year-old organization promotes the general development and welfare of the builders hardware industry and its member companies. The BHMA also authors 31 ANSI/BHMA standards for product quality and performance.





# ELECTRONIC LOCKSMITHING:

## An Action Plan



by William C.  
Deutsch

**E**ven with all the attention electronics get, some of you still haven't jumped in. Others of you have added electronics to your menu of services, but haven't made the money you had hoped for. I'm writing to help folks in both categories. If you haven't gotten involved yet, I hope this article will be the final encouragement. If the electronic part of your business hasn't grown like you wanted, this action plan may help you to increase profits by focusing your efforts.

There are three things that you can do to develop the electronic side of your business: prepare, sell the benefits, and seed the market. Let's break them down.

### Prepare

John Henry may have been born with a hammer in his hand, but regular guys like us have to learn to use our gear. If you are a master with the pick and tension wrench, it's the result of long practice. The multimeter is no different. It's going to take time and preparation, but you can master the new skills that today's market demands. Here are a few ways to make your installations go smoothly and fine-tune your skills in the process:

1. Read the manual before you head out. This seems obvious, but it works. Most of us don't open the manual until we get into trouble. If you are installing a piece of gear for the first time, reading the manual before you're under the pressure of

finishing the job will do wonders. If you skim the book before each subsequent install, you'll probably learn a new trick each time. That's how you grow.

2. Hook up and bench test the equipment before you leave the shop. It takes less time to do this than it does to fix problems in the field.

3. Study. Schedule time to read articles like the ones you find in *The National Locksmith*. There are some outstanding books in print as well as factory certification classes available. Make the time!

Another hint: Start small. Your first job shouldn't be a networked system with integrated fire, burglar, access control, and digital CCTV. I recommend getting your feet good and wet with a stand-alone system such as the SiteLine® Intelligent Lockset®. Over 50% of standalone systems are sold by locksmiths. And with good reason. While you may have to acquire some new computer skills to sell and service them, standalones install much like mechanical locksets.

### Sell the Benefits

The best sales tip I can give you is this: Sell the benefits, not the hardware.

If, when writing proposals, you routinely ask "would you like me to give you a price on electronics, too?" you'll get a few bites. But you'll get a lot of blank stares, too. Focus on what the electronics will do for your customer. When you are conducting a walk-through and see a room that holds high dollar inventory, say something like, "I can key this door so that you'll have a record of every one who enters."

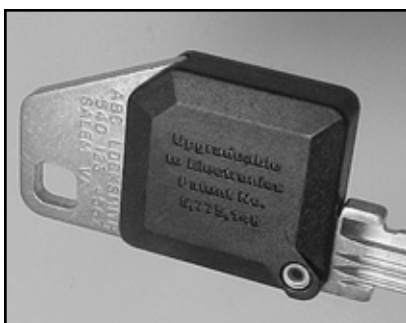
When you do that, you are selling one of the benefits of electronics, not a piece of hardware that your customer may not fully understand.

Here's another approach: Ask your client if there are any areas where access needs to be restricted after hours. Then tell them that you can "key" those doors so that users can only enter during specified times. Isn't that more persuasive than, "Do you want electronics with that"?

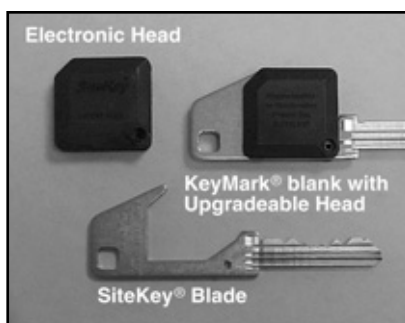
Keep your eyes open for areas where the risk of lost keys is especially high. The benefit of an electronic product in this case is that keys can be deleted instantly. Look for areas - especially in perimeters - where eliminating a key blocks access to the entire facility, and suggest an appropriate electronic product.

Another opportunity for benefit selling comes when a customer asks you to cross-key. You should explain that cross keying, while convenient for them, actually compromises the reliability of the cylinder. The real solution is to install an electronic lockset that can store hundreds of unique keys with no loss of security.

Finally, don't swing for the fences every time you go out selling. Yes, winning a bid for a 500 door access control system will give you a nice sales bump - if you've got the manpower and know-how to install and service it. But over time, hitting singles and doubles will score more runs. If you can consistently add one Intelligent Lockset to every keying system you sell, it will be about the same as if you added fifteen mortise cylinders. That will certainly add revenues over the course of the year.



**1. A KeyMark® key blank.**



**2. A SiteLine key.**

### The Dual Credential

The most popular access control credentials are cards and codes, but they do have some security drawbacks. With a code you can easily lose any semblance of key control. While a code can't be physically lost, it can be given away or duplicated at whim. An employee tells their code to a friend, that employee tells a friend, who tells a friend, and so on and so on. The only way to prevent this is to train each employee how to protect their code, and then to rotate codes regularly. The bottom line is it takes re-education and new policies. That's not a bad thing, but the easier you can make it to integrate a security system with the users' habits and lifestyles, the less chance you have for a breach.

Cards are another example. While prox cards and smart cards have made a tremendous impact on security, there are some things to watch out for. Not long ago, I read about a break-in that involved a prox card. The cardholder kept the card in his glove box. The car was in for service over the weekend. Since the card had the company's name conveniently printed on it, a crooked mechanic lifted it and helped himself to some new computers. Why was the card in the glove box to begin with? Most likely, so that the owner wouldn't forget it. The point: inconvenience can often create a hole in security.

One answer is the SiteLine dual credential, so named because the electronic credential is attached to a high security mechanical key. Since most people are already used to carrying keys, they won't resort to measures like hanging the credential from their sun visor or tucking it in the glove box. Users who need access to both mechanical and electronic doors

carry only one credential. Users who need only access to mechanical doors carry a bitted key, but if they ever need access to electronic doors, the upgradeable bow of their key can be removed and replaced with an electronic head. *Photograph 1*, shows a KeyMark® key blank with an upgradeable head. Also shown is a Biaxial® cut key with the electronic head detached. As you can see, turning a Medeco key into an electronic credential is as simple as removing one rivet and swapping heads.

### Seed the Market


The dual credential also works for your business. The upgradeable or "seeding" keys can be used on every job, regardless of whether electronics are incorporated. The seeding keys, however, carry the message "Upgradeable to Electronics" on the head, and your name and number stamped on the bow. It's a constant reminder of the services you perform. And, when the time comes to add electronics to a facility, the users are already holding the key, making it easier to integrate the enhanced security into their lifestyle. *Photograph 2*, shows the SiteLine seeding key.

### Summary

If you're thinking about moving into electronics, here is an action plan to get you moving in the right direction.

1. Train
2. Sell the benefits
3. Seed the market

Now seize the day!

*William C. Deutsch is Technical Support Engineer for Medeco High Security Locks. For more information, or to comment on this article, you can reach Mr. Deutsch at EAC@Medeco.com. *



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by  
**John Blankenship**



**1. This little 50cc scooter came out in 2001. It uses a new code series.**



**2. The ignition/steering lock is on the right side below the handlebars. The code is stamped on the ignition lock but I have not had the opportunity to remove one yet.**



3. The ignition lock is shown in the OFF position. To lock the steering, you need to push the plug in to turn it counterclockwise to the LOCK position. The steering has to be turned to the right or left before the steering lock bolt will extend. You also have to push the plug in to turn it clockwise from LOCK to OFF. You do not have to push it in to turn if between OFF and ON.



4. The seat lock is located on the left side under the rear of the seat. Turn it 90 degrees clockwise against spring pressure and you can lift the seat up to access the storage compartment under it. The back of the seat lock is behind plastic that will have to be removed to gain access to the back of the lock.

Continued on page 117

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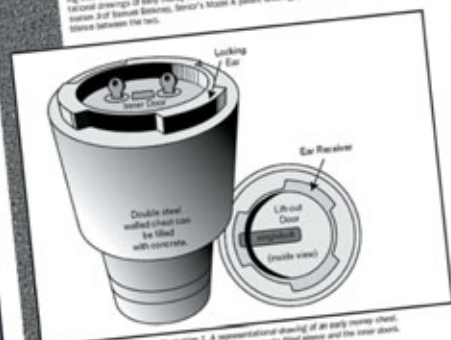


Illustration 1: A cross-sectional drawing of an early money chest, showing the internal mechanism and the location of the dog pin.

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5. The gas cap is behind the seat. Pick the plug 90 degrees clockwise to unlock it. The keyway is wide open so it should not be too difficult to read the wafers to obtain the cuts for spaces 1-5.



6. Remove the two Phillips screws from the bottom of the gas cap to disassemble it. It contains wafer tumblers in spaces 1-5. Once you cut a key that turns the gas cap lock smoothly, progression spaces 6 & 7 in the seat or ignition lock.

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7. The original key is on the left. The code cut X248 on the right with cuts of 1242314 works all of the locks on the scooter.

8. The code, A5954365, is stamped on the original key. This is a new and unique code series. The A and first five numbers of the code have been around since the early 80's. Yamaha code A59543 = 42314, which is the last five cuts of code A5954365 = 1242314. The last two numbers of the code determine the first two cuts; in this case 65 = 12. Tim Lents, owner of Lents Lock & Safe in Washington, Indiana and I have decoded numerous Vino keys at our local Yamaha dealers and have determined the code numbers for the first two cuts. To determine the cuts for a Vino code, look up the Yamaha code using the A and first five numbers of the code in order to determine the cuts for spaces 3-7. Then look in Table 1 to determine the cuts for spaces 1-2.



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Table 1

If the last two numbers of the code are:	The first two cuts will be:
01.....	44
04.....	34
05.....	14
09.....	24
11.....	43
14.....	33
15.....	13
19.....	23
31.....	41
34.....	31
35.....	11
39.....	21
61.....	42
64.....	32
65.....	12
69.....	22

**Codes:** A3201001-A7989769

**Blank:** Ilco X248 (YM63), Curtis YM63,  
Silca YH35RBP

<u>Spacing:</u>	<u>Depths:</u>
1= .157	1= .295
2= .256	2= .276
3= .354	3= .256
4= .453	4= .236
5= .551	
6= .650	
7= .748	

**Card Number:** CMC71

**DSD Number:** 441

**ITL Number:** 523

**Curtis:** MZ-3 Cam & SU-2B Carriage

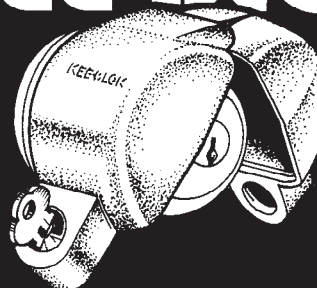
<b>Tumbler Locations:</b>	1 2 3 4 5 6 7
Ignition	X X X X X X X
Gas	X X X X X
Seat	X X X X X

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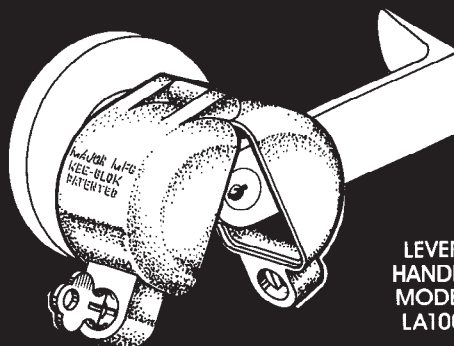
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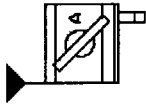
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Spaces		Depths		Cutter: CW-1011		IC #: 212	
mm	Inch	mm	Inch	Jaw: A	Series	Original	
1 430	169	1 685	270		K0-K1005		
2 660	260	2 635	250		A1-A4088		
3 890	350	3 585	230		D1-D4088		
4 1120	441	4 535	211		WS0-WS1005		
5 1350	531				X1-X4088		
6 1580	622						
7 1810	713						
8 2040	803						
9 2270	894						
10 2500	984						



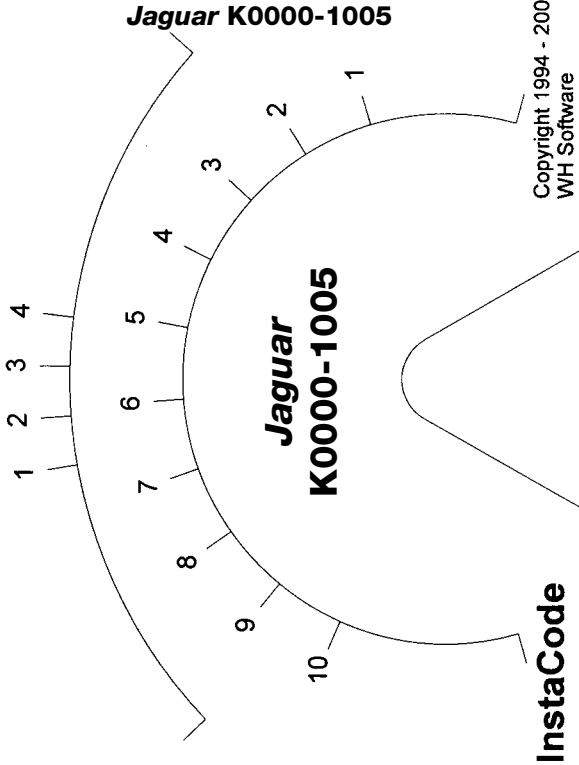
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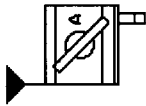
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Cut Along Outside of Card and Laminate To Use

Spaces		Depths		Punch		IC #: P212	
mm	Inch	mm	Inch	Jaw: A		Series	Original
1 430	169	1 685	270			K0-K1005	
2 660	260	2 635	250			A1-A4088	
3 890	350	3 585	230			D1-D4088	
4 1120	441	4 535	211			WS0-WS1005	
5 1350	531					X1-X4088	
6 1580	622						
7 1810	713						
8 2040	803						
9 2270	894						
10 2500	984						



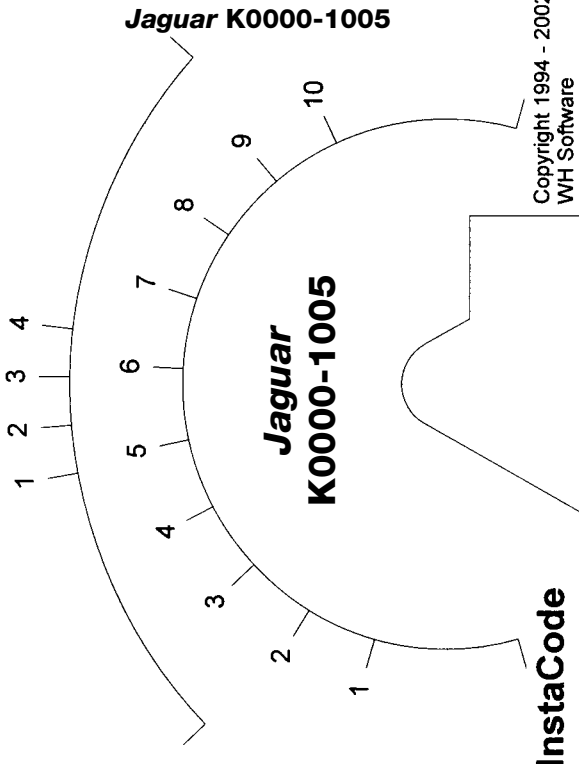
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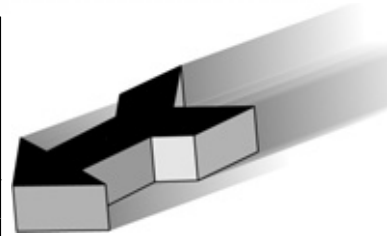
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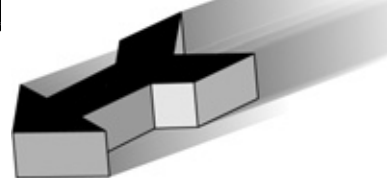
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## Code Card

For the 1200PCH™

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# KEY CODES

## Jaguar K0000-1005

**Manufacturer:** Jaguar

**Code Series:** \_\_K0000-1005

### Key Blanks:

**Boerkey:** \_\_\_\_\_1464  
**CEA:** \_\_\_\_\_WAS14P1  
**Curtis:** \_\_\_\_\_JA-2  
**Errebi:** \_\_\_\_\_WS8RP1  
**Fuki:** \_\_\_\_\_K-208  
**Ilco:** \_\_\_\_\_X177  
**Ilco EZ:** \_\_\_\_\_JA2  
**Kraga:** \_\_\_\_\_UP351  
**Lotus:** \_\_\_\_\_WSO27P  
**Orion:** \_\_\_\_\_JA2P  
**RR:** \_\_\_\_\_PW026  
**Silca:** \_\_\_\_\_WAS13RP  
**Taylor:** \_\_\_\_\_X177

**Number of Cuts:** \_\_\_\_\_10

**M.A.C.S.:** \_\_\_\_\_3

**Key Gauged:** \_\_\_\_\_Shoulder

**Center of First Cut:** \_\_\_\_\_.169

**Cut to Cut Spacings:** \_\_\_\_\_.090

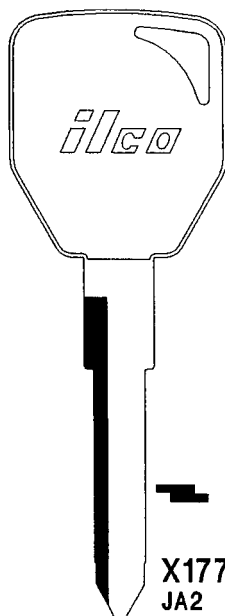
**Cut Depth Increments:** .020

### Spacings:

1 - .169  
 2 - .260  
 3 - .350  
 4 - .441  
 5 - .531  
 6 - .622  
 7 - .713  
 8 - .803  
 9 - .894  
 10 - .984

### Depths:

1 = .270  
 2 = .250  
 3 = .230  
 4 = .211



### HPC 1200CMB

**Code Card:** \_\_\_\_\_CF49  
**Jaw:** \_\_\_\_\_A  
**Cutter:** \_\_\_\_\_CW-1011  
**Gauge From:** \_\_\_\_\_Shoulder

### HPC 1200PCH (Punch)

**PCH Card:** \_\_\_\_\_N/A  
**Punch:** \_\_\_\_\_PCH-1011  
**Jaw:** \_\_\_\_\_A

### Silca UnoCode

**Card Number:** \_\_\_\_\_217  
**Vice/Adapter:** \_\_\_\_\_V100 Std

### HPC CodeMax

**DSD #:** \_\_\_\_\_249  
**Jaw:** \_\_\_\_\_A  
**Cutter:** \_\_\_\_\_CW-1011

### Curtis No. 15 Code Cutter

**Cam-Set:** \_\_\_\_\_JA-2  
**Carriage:** \_\_\_\_\_JA-2A

### Framon #2

**Cuts Start at:** \_\_\_\_\_.169  
**Cut to Cut Spacing:** .090  
**Block #:** \_\_\_\_\_3  
**Depth Increments:** .020  
**Cutter:** \_\_\_\_\_FC90-40  
**Key Clamping Info:** Use  
 flip-up shoulder stop.

K0000	1112112223	K0019	1112221412	K0038	1112334113	K0057	1112444331	K0076	1114143312	K0095	1114321144
K0001	1112113242	K0020	1112223414	K0039	1112341134	K0058	1113112432	K0077	1114144124	K0096	1114323334
K0002	1112114222	K0021	1112224431	K0040	1112342312	K0059	1113143334	K0078	1114211344	K0097	1114324121
K0003	1112121242	K0022	1112231314	K0041	1112343121	K0060	1113211424	K0079	1114212221	K0098	1114331122
K0004	1112122144	K0023	1112232431	K0042	1112344312	K0061	1113344333	K0080	1114213412	K0099	1114332114
K0005	1112123344	K0024	1112234144	K0043	1112411342	K0062	1113411424	K0081	1114214144	K0100	1114333141
K0006	1112124124	K0025	1112241334	K0044	1112412221	K0063	1114112223	K0082	1114221412	K0101	1114334113
K0007	1112131222	K0026	1112243314	K0045	1112413144	K0064	1114113242	K0083	1114223414	K0102	1114341134
K0008	1112132124	K0027	1112244331	K0046	1112414312	K0065	1114114222	K0084	1114224431	K0103	1114342312
K0009	1112133122	K0028	1112311223	K0047	1112421344	K0066	1114121242	K0085	1114231314	K0104	1114343121
K0010	1112134142	K0029	1112312142	K0048	1112422412	K0067	1114122144	K0086	1114232431	K0105	1114344312
K0011	1112141242	K0030	1112313123	K0049	1112423314	K0068	1114123344	K0087	1114234144	K0106	1114411342
K0012	1112142144	K0031	1112314142	K0050	1112424331	K0069	1114124124	K0088	1114241334	K0107	1114412221
K0013	1112143312	K0032	1112321144	K0051	1112431142	K0070	1114131222	K0089	1114243314	K0108	1114413144
K0014	1112144124	K0033	1112323334	K0052	1112432331	K0071	1114132124	K0090	1114244331	K0109	1114414312
K0015	1112211344	K0034	1112324121	K0053	1112433133	K0072	1114133122	K0091	1114311223	K0110	1114421344
K0016	1112212221	K0035	1112331122	K0054	1112441314	K0073	1114134142	K0092	1114312142	K0111	1114422412
K0017	1112213412	K0036	1112332114	K0055	1112442333	K0074	1114141242	K0093	1114313123	K0112	1114423314
K0018	1112214144	K0037	1112333141	K0056	1112443314	K0075	1114142144	K0094	1114314142	K0113	1114424331

# Jaguar K0000-1005

K0114	1114431142	K0123	1131112223	K0132	1131133122	K0141	1131214144	K0150	1131244331	K0196	1133211122
K0115	1114432331	K0124	1131113242	K0133	1131134142	K0142	1131221412	K0151	1131311223	K0197	1133212114
K0116	1114433133	K0125	1131114222	K0134	1131141242	K0143	1131222414	K0152	1131312142	K0198	1133213121
K0117	1114441314	K0126	1131121242	K0135	1131142144	K0144	1131224314	K0153	1131313123	K0199	1133214113
K0118	1114442333	K0127	1131122144	K0136	1131143312	K0145	1131231334	K0154	1131314142	K0200	1133221141
K0119	1114443314	K0128	1131123344	K0137	1131144124	K0146	1131234144	K0155	1131321144	K0201	1133223133
K0120	1121112432	K0129	1131124124	K0138	1131211344	K0147	1131241314	K0156	1131323334	K0202	1133224141
K0121	1121143334	K0130	1131131222	K0139	1131212221	K0148	1131242431	K0157	1131324121	K0203	1133231314
K0122	1121344333	K0131	1131132124	K0140	1131213412	K0149	1131243314	K0158	1131331122	K0204	1133232331

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K0159	1131332114	K0205	1133233314
K0160	1131333141	K0206	1133234312
K0161	1131334113	K0207	1133241333
K0162	1131341134	K0208	1133243334
K0163	1131342312	K0209	1133244331
K0164	1131343121	K0210	1133311134
K0165	1131344312	K0211	1133313341
K0166	1131411342	K0212	1133314312
K0167	1131412221	K0213	1133321334
K0168	1131413144	K0214	1133323344
K0169	1131414312	K0215	1133341114
K0170	1131421344	K0216	1133342121
K0171	1131422412	K0217	1133343113
K0172	1131423314	K0218	1133344121
K0173	1131424331	K0219	1133411122
K0174	1131431142	K0220	1133412114
K0175	1131432331	K0221	1133413121
K0176	1131433133	K0222	1133414113
K0177	1131441314	K0223	1133421141
K0178	1131442333	K0224	1133422312
K0179	1131443314	K0225	1133423133
K0180	1131444331	K0226	1133424141
K0181	1132141412	K0227	1133431133
K0182	1132411414	K0228	1133432314
K0183	1133111324	K0229	1133433341
K0184	1133112312	K0230	1133434312
K0185	1133113314	K0231	1133441141
K0186	1133114312	K0232	1133442312
K0187	1133121344	K0233	1133443133
K0188	1133123343	K0234	1133444141
K0189	1133131134	K0235	1134113331
K0190	1133132113	K0236	1134211331
K0191	1133133121	K0237	1134411331
K0192	1133134113	K0238	1134414314
K0193	1133141132	K0239	1134431331
K0194	1133143133	K0240	1134434314
K0195	1133144141	K0241	1134441333



# Jaguar K0000-1005

K0242	1134443334	K0263	1311213142	K0284	1311334113	K0300	1311441314	K0316	1313114124	K0332	1313214314
K0243	1141223431	K0264	1311214144	K0285	1311341134	K0301	1311442333	K0317	1313121142	K0333	1313231312
K0244	1142111432	K0265	1311221314	K0286	1311342141	K0302	1311443312	K0318	1313122144	K0334	1313232314
K0245	1142444333	K0266	1311222334	K0287	1311343133	K0303	1311444314	K0319	1313123141	K0335	1313233312
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K0251	1311123122	K0272	1311241314	K0293	1311421314	K0309	1312311412	K0325	1313141134	K0341	1313313143
K0252	1311124124	K0273	1311242334	K0294	1311422334	K0310	1312312431	K0326	1313142141	K0342	1313321141
K0253	1311131242	K0274	1311243312	K0295	1311423312	K0311	1312314331	K0327	1313143133	K0343	1313341141
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K0258	1311142124	K0279	1311314124								
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K0360	1314323141	K0406	1331323134	K0452	1333212331	K0498	1431243334
K0361	1314331114	K0407	1331324141	K0453	1333213312	K0499	1434412314
K0362	1314332133	K0408	1331331114	K0454	1333214331	K0500	1434441331
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K0575 3113124143	K0621 3114212334	K0667 3131411122
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K0674 3131424141	K0684 3132142333	K0694 3133133114	K0704 3133234312	K0714 3133342121	K0760 3311142114
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K0751 3311121122	K0797 3311423312
K0752 3311122114	K0798 3311424314
K0753 3311123121	K0799 3311431331
K0754 3311124113	K0800 3311432334
K0755 3311131134	K0801 3311433341



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# Jaguar K0000-1005

K0802 3311434334	K0824 3313132212	K0846 3313322141	K0855 3313344121	K0864 3313441331	K0873 3314422333
K0803 3311441312	K0825 3313133114	K0847 3313323144	K0856 3313411312	K0865 3313442334	K0874 3314423331
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## A NOTE FROM THE CIRCULATION MANAGER

I don't want **you** to be left out... but sometimes we do run out of back issues. Please be sure to send in your **Renewal Payment** on time and your **Change of Address** at least 4 weeks in advance. Then you won't be the one receiving a note saying, "Sorry, we ran out."

Send your name, old address and new address to:

The National Locksmith  
Address Change Dept.  
1533 Burgundy Pkwy.  
Streamwood, IL 60107.



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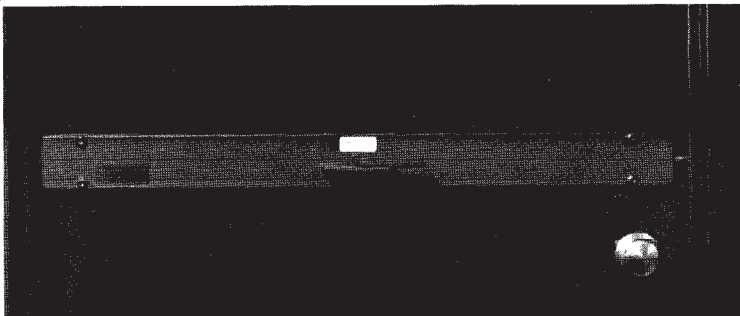
**Or visit our web site at**  
[www.MLANJ.org](http://www.MLANJ.org)

# Jaguar K0000-1005

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### A&B Safe Corporation



[www.a-bsafecorp.com](http://www.a-bsafecorp.com)

### Abloy® DiskLock Pro



[info@abloy.ca](mailto:info@abloy.ca)

### Adrian Steel



[www.adriansteel.com](http://www.adriansteel.com)

### DiMark International



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### Dynalock Corp.



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### Indiana Cash Drawer Co.



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## KustomKey

<http://www.kustomkey.com>



Kustom Key, Inc. has been in business since 1972 offering custom incised and embossed keys for locksmiths. Their web site is one of the best we have seen in a long time.

We especially like two features. One is the online catalog which loads very quickly, and shows graphics of all the products with comprehensive descriptions. It's a pleasure to browse a site which not only contains an online catalog, but one which is produced in html so that it runs fast.

The other really excellent portion of this site is the comprehensive Keyway Cross Reference. It also runs very fast and allows you to look up a lock and then see the blank number assigned to it for each manufacturer that makes the key.

Kustom Key has made it easy to order online in their site, and try the Trading Post section where you can buy, sell or trade locksmith equipment.



### International Locking Devices, Ltd.

International Locking Devices, Ltd.

[www.gatelock.com](http://www.gatelock.com)

### Jet Hardware Mfg. Co.



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[www.iccore.com](http://www.iccore.com)

### Major Manufacturing



[www.majormfg.com](http://www.majormfg.com)

### McDonald DASH Locksmith Supply



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### MDS, Inc.



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### Monaco Lock



[www.monacolock.com](http://www.monacolock.com)

### National Auto Lock Service, Inc.



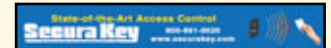
[www.laserkey.com](http://www.laserkey.com)

### Omaha Wholesale Hardware



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### SecuraKey



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### Securiton Magnalock



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[www.select-hinges.com](http://www.select-hinges.com)

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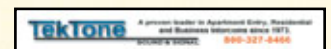
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### Yale Security Group



[www.yalesecurity.com](http://www.yalesecurity.com)

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Taking Industry Products for a...

# TEST DRIVE

## The Simplex L1000 Series

### PRODUCT:

Simplex has long been known as a quality keyless entry lockset with many extras. The lever lockset continues this tradition with the necessary handicap access capacities required by ADA.

The Simplex L1000 is built around the Schlage D series body, so it has a solid foundation. The usual easy combination change is a part of this lockset. The combination is changed through a portal created by removing a locking access point. Simply punch in the old combination, insert the turning tool provided, turn the tool clockwise until you feel a slight click, turn the tool back to center and remove, enter the new combination and try it several times. The new combination is now working.

Each time the combination is entered it will open the lock one time and will lock again when closed. Each entry requires a new working of the combination to retract the latchbolt.

Since the Simplex L1001 is totally mechanical, no electricity is needed to operate the lock. This saves a great deal on the installation, both in time and cost.

### INSTALLATION:

In addition to the 2-1/8" crossbore hole, three holes will be needed to install the lockset. Use the template to mark the location of the holes on



both sides of the door. The tools required will be a 1" hole saw or bit, 1/4" drill bit, a drill motor and marker to locate the holes. One 1" and two 1/4" holes will be drilled above the lockset hole as marked from the template. For the key bypass function you will have to drill one more 1" hole to connect the lock with the turning device. Drill both sides of the door to prevent splintering and make for a more professional installation.

Inset the lock in the holes drilled and place the inside cover over the inside of the door. Install two smaller screws to hold the two pieces together and check to be sure it is centered. Place the inner cover and turn the rose into the spindle. Tighten and install the lever handle. Check the function of the lock.

### FUNCTIONS:

As is the case with most Simplex locksets, the lever locks have a variety of functions available. Included in the selection is a key override for several keyways (the 1021 series), passage function set by a thumb-turn (the 1031 series) or with key override (the 1041 series) locked from one side with egress, or locked on both sides without egress, and for exit devices (the 1020 series).

The key bypass styles covered include Best/Falcon, Corbin/Russwin, Schlage and Medeco. The key bypass

### IN SUMMARY:

**DESCRIPTION:** Mechanical push-button lock with lever handle.

**PRICE:** \$450-\$600

**COMMENTS:** Has a variety of functions available.

**TEST DRIVE RESULTS:** Built around the Schlage D series body, so it has a solid foundation.

enables the carrier to open the door without the combination, but not to leave it unlocked. In order to leave a lockset unlocked, it is necessary to have the passage function in the lock and have it enabled.

The lock is handed so you will have to order the correct handing. It is not difficult to determine handing on these locks. By just knowing which direction the lever points you will have the handing. If the lever points to the left it is left handed, and when it points to the right, it is right handed. Pretty difficult, huh?

### AVAILABILITY AND PRICING:

You should be able to get the Simplex locksets from any full line supplier. If your supplier does not carry the locks or the functions you require, check with Simplex or call another supplier in your area.

The pricing structure of the lock will be determined by the function you require. The basic L100011 has a suggested retail of around \$450. If you add key bypass it will add around \$50 to \$125 to the selling value, depending on the keyway. The passage function will add another \$100.

Several finishes are available including 26D, US3 and US5. Again the desired finish will effect the cost. Be sure to check the costs before quoting a price. **TRL**





**Combines the convenience of magnetic locks and the strength of mechanical locks, in one compact case.**

**OUR NEW MAGLOCK** is a lot like a super hero: Most of the time it performs like a regular, mild mannered magnetic lock. It's compact, lightweight, durable and reliable.

However in the event of a forced entry attempt, the MS Maglock turns tough. Very tough. Actually, downright nasty.

Because of a breakthrough design, any forced entry attempt triggers a pair of hardened steel mandibles that mechanically clamp the armature. This gives the MS Maglock an unheard of 4,000 pounds of holding force! Now you can have all of the advantages of a small, low-weight, low-draw maglock with absolutely zero sacrifice in strength and security.

Incidentally, you see the MS Maglock here, being hoisted by the tough little guy on the right? It's actual size.

Who said you couldn't be small and lightweight and still have super hero strength?



ACTUAL SIZE

#### How It Works:



In a forced entry attempt, two hardened steel mandibles clamp down on the armature for superior holding force.



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